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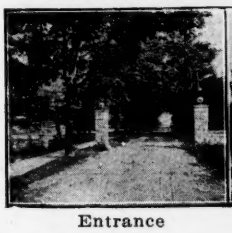
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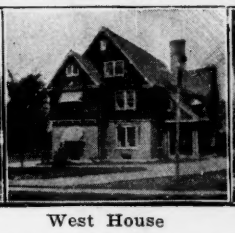
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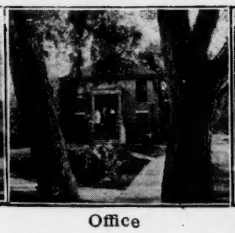
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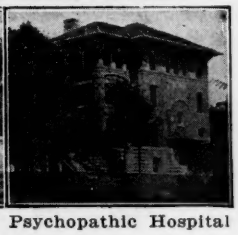
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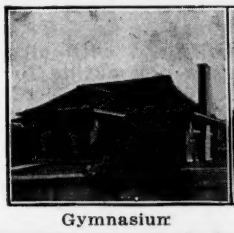
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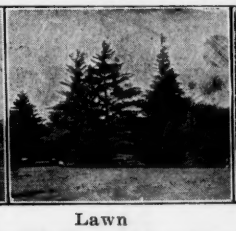
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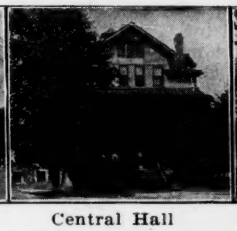
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Vol. XX GRAND RAPIDS, MICHIGAN, SEPTEMBER, 1921 No. 9

Original Articles

THE GIANT MAGNET IN OPHTHALMOLOGY*

RAY CONNOR, M. D., F. A. C. S.
DETROIT, MICH.

The first reference I have been able to find in the literature on the use of the magnet in ophthalmic surgery, was in the first volume of the Royal London Ophthalmic Hospital Reports in which Mr. Dixon recorded the unsuccessful use of a large magnet in a case of steel in the vitreous. The man was injured on December 2, 1858, while knocking an iron hoop off a cask with a chisel. The edge of the chisel broke and penetrated the upper lid, the conjunctiva and sclera and lodged in the vitreous where it could be seen with the ophthalmoscope. The magnet attracted the steel, but it was removed by forceps through a scleral section, leaving the eye in good condition. Mr. Dixon remarked that there was a certain lucky chance in such cases without which the most skilful manipulations might fail of success. Prof. Haab presented his first paper on the use of the giant magnet in 1892, something over a generation later and the literature since this time has been voluminous. In 1903, Dr. Leartus Connor published a paper in the **Journal of the A. M. A.** on "The Giant Magnet in Ophthalmic Surgery—Report of Two Cases—Remarks." In 1910, Dr. Charles Stedman Bull of New York published a short paper, "The Post-Operative History of Eighteen Cases of Magnetic Foreign Bodies Removed from the Eye by the Haab or Giant Magnet." His results were very discouraging. Phthisis Bulbi resulted in six cases and sympathetic uveitis in eight cases, and enucleation was necessary in ten cases. The vision was permanently lost at the time of the accident in five cases. There was immediate useful vision in two cases. Permanent useful vision was not gained in any case. This seems a decidedly gloomy outlook. In the last ten years, the literature has continued to grow and the opportunity to see such cases in an industrial city like Detroit has been a rich one. I shall not burden you, however with a review of the literature but ask your attention to a few cases which have come to my notice.

The first point to be considered is, of course, whether or not there is a foreign body and if one, where located. The problem is entirely different when there is a foreign body outside the globe. Within a small margin of error, the X-Ray in competent hands can give a decisive answer to this question. The British, during the war, held an X-Ray was not indispensable in these cases and were accustomed to use the giant magnet without waiting for an X-Ray when through pressure of other work, this was not immediately available. I have three cases in which the foreign body was localized in the orbit outside the eyeball and for this reason was not touched and has not at least to my knowledge, given trouble since. Two of these it is true were lead and hence the question of the magnet did not enter.

W. H., a vigorous man of 37, while riding on the river, was peppered with small shot from a little cannon fired to celebrate the closing of the season. There was in addition to a number of wounds in the legs, one about 1 cm below the outer canthus of the left eye. No lesion could be made out in the fundus and the X-Ray located the shot about 4 mm back of the ball and outside the optic nerve. This has been permitted to remain and has given no trouble in something like six years.

The second case of bullet wound was not so fortunate as the shot went through cornea, lens and posterior coats of the eye, finding lodgement in the back of the orbit near its apex. The sight was of course practically destroyed by the wound but the eyeball was preserved.

The third case was one where a chip of cast iron penetrated the cornea, lens and posterior coats of the eye. This was unaffected by the giant magnet and was localized behind the globe in the orbit,

*Read at 56th Annual Meeting, Bay City, May, 1921.

where it was allowed to remain and a report one year later showed the eyeball was giving no trouble and there was some little vision in the eye.

In all these cases, the localizing of the foreign body outside the eyeball was of great service, especially as to prognosis.

Simple inspection may be sufficient to demonstrate the presence of a foreign body. On the other hand the inability to find any wound of entrance does not exclude a possible intraocular foreign body. The giant magnet is of very considerable service in removing steel which has become deeply imbedded in the cornea or even in cases where the steel is subconjunctival. I have seen 4 or 5 conjunctival cases, one of which will be enough to mention here.

R. R., aged 42, was struck in the right eye about a month previously and came in with a small raised phlyctenule at the outer segment of the eye. There was some slight conjunctival congestion around this and a small piece of steel was removed with the magnet from its center.

While steel in this situation would doubtless not do the eye any material harm, the giant magnet certainly facilitates its removal and leaves the eye in better condition than if the steel is left in situ.

A minute fragment of steel deeply embedded in the cornea is sometimes very difficult to remove mechanically and may even be pushed into the anterior chamber in the efforts to remove it. The magnet removes these with less trauma and obviates the danger of pushing them still deeper. I have notes on some 7 or 8 of these cases, one of which will suffice for our present purpose.

J. F., aged 6, was struck in the right eye with a fragment of steel. There was a wound of the cornea, at the upper and outer quadrant and a small foreign body was found embedded in the cornea and with its inner extremity protruding into the anterior chamber. This was removed by the giant magnet through the wound of entrance and the eye made a good recovery.

There is in this class of cases very little danger of serious impairment of vision as the wounds are apt to be clean and the healing leaves little more opacity than an ordinary foreign body in the cornea.

The most favorable cases aside from these where the steel is embedded in the external coats of the eye, are those with just sufficient force to penetrate these coats. I have two cases in which the steel was in the anterior chamber and had not injured the lens.

The first case was seen in 1910. W. G., aged 29, was struck in the right eye. The steel entered through the lower part of the cornea and was in front of the iris in the lower part of the anterior chamber. It was found impossible to extract without enlarging the wound of entrance but this was done and the eye left with practically normal vision.

The other case was H. R., aged 34, who had a small particle not much larger than the point of a pin in his anterior chamber. There was a small wound of the cornea, a little up and out from center. It was impossible to see this foreign body when at rest but the magnet imparted to it a lively motion and its extraction left a sound eye with a clear lens and normal vision.

Dr. Leartus Connor had a similar case in October 1903, except in this case the steel was embedded in the iris below and so was removed with more difficulty, leaving however, the lens uninjured.

Five cases of foreign body in the lens are reported of, from a few days to two years' duration. In none of these cases was the eye lost and good vision was obtained in those where it was possible to remove the cataract and follow the case to completion.

A man, aged 35, seen with Dr. Thuner, had a very minute particle imbedded in the lens and this was removed through the wound of entrance by the magnet, leaving, of course, some lenticular opacity.

F. H., aged 25, was seen by Dr. Leartus Connor in 1902 with a history of injury six days before. The steel was embedded in the lens and was removed with a good deal of difficulty because of the large size of the fragment and its becoming entangled in the iris tissue. A strabismus hook had to be entroduced into the anterior chamber in order to make direct contact between the steel and the magnet.

W. D., aged 19, was seen in 1904. A couple of months before, he noticed his left eye failing. His lens was cataractous and on dilating his pupil, a spot was noticed at the upper and outer quadrant of the lens. The giant magnet was used and displaced this particle which came easily into the anterior chamber. A corneal section, in the lower segment, permitted the removal of the steel and a considerable portion of the soft lens matter. He subsequently got normal vision with the aid of a cataract lens.

J. B., aged 28, was struck with a good sized bit of steel, cutting the cornea and imbedding itself in the lens. This was removed through the wound of entrance without enlarging it or introducing any instrument into the eye.

W. M., aged 33, was first seen by Dr. Leartus Connor in 1901. He had been struck in the eye with a bit of steel while hammering a hoop on a paint barrel. The eye quieted down and he had good vision for about a year. The lens then became opaque but he had no discomfort until 1903, over two years after his accident. The eye then became very painful and the steel was removed through a keratome incision in the cornea. He later had good vision with a cataract lens.

In the cases of steel in the vitreous chamber, some have been extracted by the anterior route and others through scleral incisions. Where the lens was seriously injured and the steel was small and not too irregular, the anterior route has been most often employed. Where the wound of entrance has been behind the ciliary body and the lens intact or where the anterior extraction has failed, the scleral route has been used, if possible through the wound of entrance and if necessary through a scleral

incision. As a general rule, the fewer instruments introduced into the eye, the better the ultimate result. However each case has to be considered on its merits.

H. G., aged 36, was struck in the right eye with a chip of steel two days before. There was a corneal scar near center, shallow anterior chamber, cataractous lens and small hypopyon. The steel was drawn around the iris, but could not be removed through the corneal wound and a section had to be made with a keratome. The eye quieting down in a couple of weeks, a linear extraction was done. Some vitreous followed the soft lens matter and came out through the corneal wound. The eye made a good recovery and when seen nine years later, he could still see about 20-30 with a cataract lens.

M. L., aged 35, was struck in the right eye with a piece of steel 5 days before. The lens was cataractous and the steel was removed through the wound of entrance with the giant magnet. Four months later, a linear extraction was done and immediately after the capsulotomy, as in a number of these cases, the vitreous seemed to come through the lens as if the foreign body had made a track which the vitreous kept open. In fact in this case, the vitreous presented itself so freely as to interfere greatly with the removal of the cortical matter. However some months later, he saw 20-30 with a cataract glass.

J. M., aged 33, was struck in the right eye with a bit of steel 5 days before. The lens was striated and the steel was located toward the nasal side of the globe in the vitreous. It was removed by the giant magnet through a scleral incision. This patient had a cataract when I saw him last and may have been operated on by someone else since.

H. G., aged 29, was struck in the left eye with a bit of steel 2 days before. There was a small linear scar just above the pupil, the iris was notched and the lens cataractous. The steel was removed through a section in the lower part of the cornea. The iris prolapsed and was excised. A few weeks later, he had a linear extraction done and still later a needing gave him 20.30 vision with a cataract lens.

L. F., aged 24, was seen shortly after his accident. He was hit in the right eye with a bit of steel. The eyeball was soft. There was a wound in the upper inner quadrant of the cornea, the iris was torn behind the wound, the lens and media were hazy. The X-Ray localized the steel in the back of the eye near the disc. This was removed by Haab's method through a corneal incision. The eye never had good vision but the eyeball was saved and the other eye was not affected.

L. D., aged 44, was reported by Dr. Leartus Connor. The steel was removed from the right eye in this patient by the anterior route.

H. B., aged 27, was struck in the left eye with a small piece of steel penetrating cornea and lens. The steel was removed through the wound of entrance. The eyeball was saved but he escaped from observation still in possession of his cataract.

J. S., aged 29, was struck in the right eye about 27 hours before. There was a central corneal wound, opaque lens, marked ciliary injection and small hypopyon. The steel was localized well back in the vitreous and removed with the giant magnet through the wound of entrance. About two months later, a linear extraction was done but a needling was refused so that his vision could not be brought above 20-200.

J. S., 32, was seen a couple of days after injury. There was marked ciliary injection, off color iris, small hypopyon, semi-dilated pupil, lens and media not clear and a small central corneal opacity. The X-Ray was doubtful. Two days later a very small foreign body was located on the nasal side in the vitreous. This was removed with considerable difficulty through an incision in the internal rectus muscle. It was necessary to introduce a strabismus hook into the eye and the final result was the saving of a good eyeball with about 20-100 vision.

One of our earliest cases was F. S., aged 28, who was first seen in 1901 and returned in December 1903. At this later date, the left eye showed marked siderosis, iris discolored and sluggish and lens cataractous. He had some X-Ray plates showing a foreign body. There was some sympathetic irritation. A good sized piece of steel was removed with the giant magnet after a corneal section and an iridectomy downward had been made. The patient made a good recovery and was seen some years later in good condition without, however, much vision in the injured eye.

A. S., aged 18, was reported by Dr. Leartus Connor, and had a large piece of steel removed from the vitreous by the anterior route. The vision was nil and the case not followed long by us.

A. W., aged 24, had a central injury to the right eye by a small foreign body which had not injured the lens enough to prevent a view of the fundus. The X-Ray located the steel just back of the eyeball but the ophthalmoscope showed something in the lower part of the fundus and this was drawn into the anterior chamber and removed through a corneal section. The lens was not removed and he saw 12-200.

F. Z., aged 24, was struck in the right eye with a bit of steel which was localized in the vitreous. The lens showed some opacity and the steel was removed by the anterior route on the second attempt. At the first operation, it was so entangled in the iris that I was unable to get it into the anterior chamber. On the second attempt, a corneal incision was made and the steel delivered by the giant magnet. The iris was then replaced and the eye made a good recovery with 10-200 vision.

F. T., aged 18, was struck in the right eye one week before. He had a small linear scar in center of cornea, some opacity of lens and slight ciliary injection. The X-Ray located it in the lower part of the vitreous. The magnet removed this through a corneal incision and the patient made a good recovery with 20-50 vision in spite of a partial cataract.

J. N., aged 22, was struck in the left eye a few hours before. There was a large subconjunctival haemorrhage and a cut in the sclera about 6 mm internal to the limbus and slightly below center. The steel was removed through the wound of entrance without any enlargement or the introduction of any instrument into the eye and the patient was discharged in a comparatively short time with 20-15 vision.

J. E., aged 21, was struck in the right eye a few hours before. The eye showed marked subconjunctival haemorrhage and a horizontal cut in the conjunctiva about 6 mm back of the limbus and about 3 mm long. The eyeball was soft. The fundus showed a white spot near site of injury. The steel was removed with the giant magnet through the wound of entrance. He was discharged with normal vision and a scar in the retina and chorioid at the site of the trauma. These last two cases were very similar and extremely fortunate as to the amount of damage.

J. S., aged 27, was struck in the left eye with a very small piece of steel. There was a good sized subconjunctival haemorrhage at the outer side and extending to the limbus. The cornea was clear, iris good color, media clear but the foreign body

was not seen. The X-Ray located a very minute metallic particle just back of the ciliary body to the outer side. The magnet applied to the cornea gave no results and an incision was made through the sclera, temporally and below with a cataract knife. The small spicule of steel was removed with the aid of a strabismus hook in the vitreous. Some vitreous was lost but the patient made a good recovery and saw 20-30.

A. M., aged 27, was struck in the right eye a few hours before. There was a small wound of entrance just above limbus and there were floating opacities in the vitreous. The lens however was clear. The X-Ray localized the foreign body just outside the sclera on the nasal side. The magnet was applied and another X-Ray showed the steel had moved and was definitely inside the globe. A scleral incision was made temporally and below and the steel was removed with the giant magnet. The eye made a good recovery and 20-30 vision was obtained in spite of the vitreous opacities.

Two cases were enucleated after successful magnet extractions.

J. F., aged 33 was struck in the right eye with a chip of steel from a riviting hammer. There was a wound of the conjunctiva and sclera on the nasal side of the globe. An effort was made to draw the steel back through the wound of entrance but it was rather large and entangled in the membranes of the eye. The scleral wound was enlarged and the membranes around the foreign body clipped and the steel extracted. The wound was closed with conjunctival sutures. Three weeks later the other eye showing signs of irritation, the injured eye was enucleated and the patient made a good recovery.

C. R., aged 27, was struck 10 days before in the left eye with a piece of steel. There was a corneal scar a little below center, adhesion of iris to lens behind this scar and an opacity of the lens at this point. The foreign body was of small size and localized near the optic disc in the vitreous. This was removed through the anterior chamber and a corneal section after Haab's method. This was followed by a good deal of reaction in the eye in spite of various forms of treatment. There was some irritation in the good eye and the injured eye was removed about 4 months after the magnet operation.

One case of foreign body was not removed by the magnet because of its size. It was something over an inch long and according to the X-Ray, the posterior end was embedded in the bone at the back of the orbit and the anterior and was free in the vitreous. The eye was blind and the wound of entrance was through the ciliary body so an enucleation was done as soon as consent could be obtained.

There were three cases in which I was unable to remove the steel in spite of a careful X-Ray localization. One was lost sight of, another was infected and enucleated and the third was left in and giving no bad effects when last seen.

M. F., aged 22, was struck with a piece of steel three days before in Flint. Attempts at home failed to remove it. There was a central corneal scar, marked ciliary injection and a semi-opaque lens. The foreign body was small and located near the posterior pole of the eye. The Haab method was tried unsuccessfully. The sclera was then incised and a strabismus hook inserted but repeated efforts were fruitless. He refused enucleation and was lost sight of in a few days.

L. G., aged 20, was seen 2 days after the accident. He saw nearly 20-30 with the left or injured eye. The media were clear, no wound of entrance was seen and no foreign body could be made out. The X-Ray located a small foreign body just behind the ciliary body on the temporal side of the ball. A scleral incision was made and repeated attempts with the giant magnet and a strabismus hook inserted into the eye failed. The eye became infected and an enucleation advised. This was refused and I heard later the eye was enucleated by a confrere and found filled with pus.

The third unsuccessful case was seen some time after the accident. About a week before, he noticed failing vision in the right eye. The sight was 20-200 when seen and there was a small linear scar in the lower part of the cornea and well marked striae in the lens. Efforts to remove the steel were unsuccessful in spite of a corneal section. About two weeks later, the patient was anaesthetized and a linear extraction made and the magnet used again. Some vitreous escaped and the attempts were discontinued. About two and one-half months later, the eye was white, the pupil was displaced downward and the vision was 20-30 with a cataract glass.

As to how long a foreign body can remain in an eye without giving rise to any sympathetic trouble, one case is of very considerable interest.

A. C., aged 61, was referred to me with a penetrating wound of the right eye. The left eye was blind and shrunken from an accident 26 years before but was quiet and was not giving him any trouble. He was rayed to exclude a foreign body in the right eye and a large foreign body was discovered in his blind eye. It is now about three years more so he has had a retained metallic foreign body in his left eye for 29 years and no sign of sympathetic trouble in his other eye.

A penetrating wound of the globe may carry infectious material into the eye so as to preclude any hope of success with the giant magnet.

A. R., aged 41, was driving a hoop from a barrel two days before and was struck in the eye with a chip from the hoop. When seen, there was no perception of light in the eye, a wound in the ciliary body, marked chemosis and pus in the anterior chamber. The eye was removed less than 48 hours after the accident and a piece of steel found in the vitreous with a general infection of the eyeball.

In such a case, the removal of the steel would have given no help and would doubtless have been futile even if it could have been done immediately.

The faiure to extract the foreign body may be due to several causes. Some alloys now being used are non-magnetic or so feebly so as to make the electromagnet ineffectual. A faulty localization may show the foreign body just inside of the globe when it is really just outside of it. The particle may be small and so firmly embedded in the sclera or other tissue as to make the magnet impotent. The foreign body may be so large as to render its removal impossible without the destruction of the eyeball. It may be impossible to obtain any useful vision because of the extent

of the primary injury. An acute infection may preclude any sight. The injury to the lens may necessitate its removal. The injury to the ciliary body may leave a painful and dangerous eye. A chronic uveitis may in time destroy the vision or a detachment of the retina. The eyeball may be lost because of the extent of the original injury. A wound in the ciliary region may require an enucleation to safeguard the other eye. A painful blind and tender eye is often best treated by removal. On the other hand, an eye may retain a foreign body for years without setting up sympathetic inflamation.

Considering the intraocular foreign bodies reported here, we have three in the anterior chamber with the eyeball preserved and good vision. There were five embedded in the lens and the eyeballs of all of these were saved. Two of these cases only could be followed through with the removal and absorption of the lens and good vision. There were 23 cases of steel in the vitreous with only three known to have been enucleated, one from infection and two following the extraction of the steel and showing signs of sympathetic irritation. Three cases had their cataracts removed and good vision obtained. Without the removal of the lens, one case saw 20-50, two 20-30, one 20-20 and one 20-15. The ultimate result depends on many factors, such as the location of the wound, the size, shape and character of the foreign body and the amount of infection carried into the eye either by the foreign body or in the attempts to remove it. The smaller the foreign body, other things being equal, the less the damage to the eyeball. From an industrial point of view, I do not regard a cataractous eye even if the lens is removed as a very valuable one. One must allow a mm or two of error in X-Ray localization. Very small bodies can be localized and I doubt if a body so small as to be incapable of throwing a shadow which can be recognized, would do much damage to the eyeball. The shortest and easiest method of extraction is the one to be advocated. Foreign bodies which cannot be extracted do not necessarily mean sympathetic ophthalmia. The ultimate results of magnet extractions are sufficiently good to make this a great advance in caring for this class of cases.

Washington Arcade.

DISCUSSION

DON M. CAMPBELL, M. D., Detroit: We all enjoyed Dr. Connor's paper, presented in his usual interesting manner, and he is to be congratulated on the small number of eyes which had to be enucleated. Three out of 23 is small in the industries, and stands out in contrast with Bull's, where none retained useful vision. I believe there is an opportunity to improve our results in that way. Those who use this must be impressed with the use of the X-Ray for examination. The title is "The Giant Magnet in Extraction of Foreign Bodies in Wounded Eye Balls." The different types of magnets are important and all have their uses. The Hirshberg is useful in selected cases, because where the foreign body is in a situation easily reached, the facility of movement of the hand magnet is an improvement over the giant magnet which is inconvenient to operate and interfere with your vision. The recent Ring magnet offers the best improvement over that. In the employment of the Ring magnet we have a full view and do not have to handle a cumbersome apparatus, and examination is made under illumination with the field of vision clearly in view. In the diagnosis of the presence of a foreign body in the eye, the first thing of importance is the history of the case. It was found in the review of some 1,050 cases that the type of work the person is doing is of great importance in arriving at a determination as to whether a foreign body is in the eye ball. If working on a lathe or with a chisel or something of that sort, they are more apt to have a retained foreign body than in other types of labor. So first of all the type of work is suggestive as to whether there is a foreign body.

Another thing that impresses me is the amount of pain suffered. You see the eye that has been injured and in which there is a great amount of pain and the amount of trauma is suggestive that there may be a foreign body not yet found. An individual will come with a small wound of the cornea and no evidence further than that of injury to the eye, and will go home and suffer all night and there is more pain than accounted for by the evident injury, that is suggestive of a foreign body.

The use of the giant magnet is not confined to the removal of the foreign body. It is also a valuable means of diagnosis by the production of pain by exposure. This will often give evidence of a foreign body, and sometimes by the movement that can be felt an idea can be had as to the situation of the foreign body.

There is great desirability of early diagnosis, because it has been found that the earlier these cases are taken care of and the earlier the foreign body is removed the less the danger of sepsis and the less danger of visual loss. In this case not seen until the fourth day of injury, that is a great handicap to the proper management of the case and the prognosis as to what the result will be.

The X-Ray is of great value. There may be a margin of error as to the exact location sometimes. but I suppose that in the past 20 years that Dr. Hickey has localized for me and there have been several hundred cases of foreign bodies in the eye, I have yet to see many cases in which that diagnosis has not been accurate, both as to the presence and the locality. Considering all the years in which we have failed to locate with accuracy, it is of paramount importance. Another value of the X-Ray in connection with the giant magnet is that it is not only important for the localization but for the clearing up of the diagnosis. I have found 17% of these 1.051 cases must have an X-Ray before there was a positive diagnosis. Something like 200 we could not be certain whether a foreign body unless the X-Ray was used.

The removal of a foreign body from the cornea is often an extremely difficult proposition. It is even more technically difficult to remove a piece of metal imbedded under a little corneal flap than out of the anterior chamber and sometimes requires an extremely delicate manipulation to get it out without perforation of the cornea. These bodies which perforate the cornea and lodge within the lens substance it is frequently safe to leave and watch. It is not in contact with the

vascular structure of the eye and not likely to produce sepsis or iridocyclosis or sympathetic ophthalmia. But if not entirely perforating the anterior capsule, but perforating the lens and barely in the posterior chamber and partly free in the aqueous chamber and part of the body in the lens, that is a dangerous position and you will have to remove the foreign body immediately if you are to have a safe eye. If entirely within the lens it can be left with safety until the cataract matures, at which time it can be removed with a cataract operation. We had five cases in this series where the foreign body was imbedded in the lens and the results have been uniformly good.

In cases where a foreign body has been lodged in the eye it requires an early diagnosis. Even metal in the vitreous is a source of great danger to the eye, especially if there is any danger of sepsis having entered along with it.

There are two routes, the anterior and the posterior. The anterior is the one to choose if it can be done that way, for the reason that the eye is preserved in its original anatomical structure. With the magnet we attempt to draw it into the anterior chamber and then remove by a cornea-scleral puncture.

The danger of the posterior route is the great danger of a ciliary detachment and a blind eye. If you have to go through the posterior route I believe a great deal can be done by keeping the individual in a recumbent position for 10 days or two weeks. This is a difficult thing to do, but if it can be done it is of great importance.

Another thing in these cases of vitreous foreign bodies is what is going to happen subsequently. I have had very few failures in the removal of foreign bodies, and I think the most difficult place is a small piece of metal in the ciliary body. It is difficult to make a puncture that will reach the point of the foreign body and open the channel for its removal.

The work I do with the magnet is not new. The first case I have in our records of localization of the foreign body by the X-Ray and its removal by the giant magnet was about a year and a half after Roentgen gave his monograph on the X-Ray, and was, I think, in 1898. I think this is when my first case of localization of the foreign body by the X-Ray, removal with the giant magnet, and the retention of good vision was done.

DR. BEAGLE: There are just a few points as a suggestion. As regards foreign bodies in the eye, in my experience there are two chief causes, first, a workman hitting a piece of hardened steel with a hammer. I have not found the lathe often to cause this injury. In one case where a man got a piece of steel in the eye and an X-Ray was taken in an hour and in three hours after the injury the magnet was applied to the scleral wound. The piece of steel came promptly to the magnet tip, but gradually an infiltration of pus occurred and gradually approached a tip and a massive abscess could be seen, and it was necessary to enucleate the eye. I lost one case in my early practice where a foreign body had gone through the conjunctiva. The very small wound did not show, and there was a blood clot the same as would come from contusion. In this case there was a piece of steel in the vitreous.

I wish you would use every other means to diagnose, and I am sure the ophthalmoscope and careful inspection of the eye is of great value. A piece of steel was localized just outside the eye ball and with the ophthalmoscope I could see it in the eyeball.

Stellite is a metal on the market by the Hayse people of Kokomo and it is used as a cutting point on a lathe. Recently we physicians have had stellite instruments because they do not corrode. It is probable that the workman struck this with a harder piece. I was unable to get it out, and unable to prove it was stellite but the other day the man returned and said he believed the piece of metal was beginning to work out of his eye, and close to the wound I could see a slight gleaming mass, and it proved to be a very bright piece of metal such as stellite is. It was in the eye a year and a half. Most metal will have a covering by that time, but this did not. I put this piece of metal in a box and intended to have it identified, but unfortunately I lost it.

Regarding the use of magnets, I at first used a large one, but of late years have used a small one. This is very useful and one can handle it readily and put the tips rather easily through the wound in the sclera. The instrument gets hit frequently and one cannot be sure whether it has the same power as when new. I send it back and have it tested.

I feel that we ought to remove foreign bodies from inside the eye by gradual pulling to the outside of the wound. I feel we should use the large magnet; place it to the wound and try to draw the piece of steel there. The small magnet is very handy and I do not find the large magnet easy to operate when I wish to introduce a tip directly into the wound. One has to employ a piece of metal wire with the magnet and it is not easy. In the first case I listed I did not realize the steel was there. When I did have an X-Ray made the retina was detached. The magnet was applied to the front of the eyeball. The foreign body was disentangled and brought around and taken out through the wound in the cornea. Treated five or six weeks in the hospital on the back without result, flat on back. Two months later an operation was done with good results.

Another similar case where the detachment followed a piece of steel, which I removed through the sclera. I was unable to get the retina to return to its place.

DR. CHAS. BAKER: Mention has been made of the use of wire. It is probable the same thing which I have found feasible in a few cases. Sometimes the piece of steel is a splinter which enters the sclera and attaches so firmly that the magnet has no effect and in some cases you may see it standing on end in the vitreous. In such cases, by introducing the steel probe right down to the point of the foreign body and bringing my instrument directly in contact with the steel in that way we can get it out. Of course the magnetic force varies in proportion to the square of the distance, so that it is in the deeper parts less effective than when it can be applied directly. In that case the introduction of a steel probe will enable you to bring it out. In one case the magnet brought it to the front, and instead of being in the wound it came directly behind the iris and pulled the iris against the cornea. Then it was necessary to perform an operation to bring it out.

DR. BENEDICT of Detroit: One thing of importance is the use of a non-magnetic eye speculum and non-magnet fixation forceps. If I have to use a probe, by introducing it into the anterior chamber as you withdraw it very frequently the foreign body will come out with it.

DR. CONNOR, (closing discussion): I am much obliged to the gentlemen for their kind discussion. Dr. Campbell speaks of being able to see what you are doing. I usually, with the giant magnet, leave the magnet alone and move the patient, bringing the eye closer or further away to get more or less force.

Some patients complain severely of pain and others very little. They are mostly young, active working men and usually very tractable patients. The last one I remember was an ex-army boy who had considerable experience in work in France and thought he had had all the experience he wanted; when the magnet pulled on him he nearly fell on the floor. He thought it the worst thing he had ever had.

The question in regard to detachment of the retina is interesting, and I am waiting as the time goes on to see whether these patients do not come in later. By waiting a few years one can get a good check on whether or not detachment of the retina is a frequent sequela in this class of cases.

A PRELIMINARY STUDY OF THE OCULAR FINDINGS IN CASES OF ABNORMAL BASAL METABOLIC RATE.*

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For several years the ophthalmoscopic finding of a maroon spot edged with pigment in the macular region, or a vacuole in the crystalline lens, has aroused my desire to learn the cause. These have appeared to me to be the first visible changes toward loss of visual acuity or in cataract formation. Especially has it seemed imperative to learn the etiology of the initial lesion when the patient has been a young adult who has presented himself simply for refraction, thinking that a correction of lenses would give the desired acuity or relief from asthenopia.

Most of the cases for fundus examination have been referred to the ophthalmologic department simply for that examination. A few have come in of their own accord for refraction only. A fundus examination is made on each case of refraction. When these first changes in the media have been found, we have endeavored to stimulate the patient's interest and vigilant co-operation in endeavoring to learn the cause of the change in his blood chemistry. For some time these cases were referred to the diabetic clinic, since vacuoles and striae and spots in lenses were commonly found in the cases of hyperglycaemia. There were some remaining, however, in whom no cause could be found for the pathology in the eye. These striae are not to be confused with the dry "cracked" appearance of the cornea sometimes found after the use of cocaine for mydriasis.

The paper, by Dr. Percy Fridenberg, on the "Eye and the Endocrine System" read at the 1920 session of the American Ophthalmologic Society was inspirational to further work, and the exhaustive and valuable "Chairman's Address" on the "Eye and the Endocrine Organs," by Dr. Zentmayer, at the New York meeting of the American Medical Association in 1917, formed a solid basis upon which to pursue the study.

Dr. Paul Roth, Director of the Metabolism Laboratory at the Battle Creek Sanitarium and his assistant, Miss Anna Peterson, B. A., M. S., contributed the metabolic data given in the tables making up this present study.

*Read at 56th Annual Meeting, Bay City, May, 1921.

DEFINITION.

The basal metabolism is the minimum energy (or heat) production during the 24 hours. This is found when the body is at absolute muscular rest and in the post-absorptive state, that is, when the stimulating effect of food is absent (12 to 14 hours after a meal.) In other words, when we find the basal metabolism we find the speed at which the fire in the body is burning, at muscular rest and in the post-absorptive state. This actually represents the sum total of cellular activity without the "forced draft" of digestion, absorption or neuro-muscular consumption. Pathological variation in the basal metabolic rate indicates disturbance in the endocrine system, which may involve one or more of the ductless glands in various combinations.

To have the subject in proper condition for the test, he is taken in the morning before breakfast, and is made to lie quietly relaxed for a preliminary period of 20 minutes or more, before the determination is made. The pulse is counted occasionally to see when it reaches the minimum rate. The body temperature, blood pressure and respiration rate are also taken.

At the Sanitarium, both the Benedict and the so-called Tissot methods are used in the determination of basal metabolism. Each subject is tested by the two methods on different days.

THE BENEDICT METHOD.

1. The subject breathes from the apparatus (in which the CO_2 is removed by a sodalime absorber) and the volume of the oxygen absorbed in a given time is noted.

2. The so-called Tissot or the respiratory valve method. The subject breathes outdoor air and the expired air is collected over a given period of time, measured and analyzed for CO_2 and oxygen. In either method the rate is obtained at which oxygen is being used in the body.

From this is calculated the heat value in calories, which is compared with that of the normal average person. It varies according to height, weight, age and sex, and the calculations are carried out on this basis. The results are reported as percentages of the normal average, above or below (plus or minus) zero, which represents the normal average.

The normal limits of the basal metabolic rate have been generally recognized to be between plus 10 and minus 10, but careful and repeated clinical observations strongly

indicate that these normal limits may be still further restricted, especially, with regard to the minus quantity. I have observed that many of the individuals with a metabolism lower than—5 have been decidedly benefited clinically by minute doses of some hormone. This would indicate that —5 is tending to the extreme of the lower limit.

In the 585 fundus examinations which have been made between Jan. 1 and May 15 1921, retrogressive changes in the crystalline lenses have been noted in 289. These are classified as striae, fine spokes, heavy or broad spokes, irregular opacities, homogeneous milkiness, specks, vacuoles. One expects to find any or all of the above named changes in the lenses with other characteristic ones in the other tissues of the eye in studying evidently sick or "sodden" patients. On the contrary, it is startling to find in an otherwise perfect eye, and in a young, robust-looking individual, on the background of a soft red reflex, a clear cut, round, full vacuole. The first question asked after such an observation is: "How have you been feeling lately?" Invariably the answer is, "I have not been well since I had the influenza," or "I had a nervous breakdown a few months ago and can't get hold of myself," or "I am well but greatly fatigued."

Fatigue has been the most constant symptom that has accompanied the finding of striae or vacuoles in the lenses.

The metabolism laboratory furnished a list of about 400 patients who during the same period has been found to have abnormal basal metabolic rates. From this list were sought out in the ophthalmologic records all who had had fundus examinations. This established the final list of 78 cases which are here presented. These 78 patients of ages ranging from 12 to 64 had had both a pathological metabolic rate and a fundus examination. In our further study it is proposed to co-ordinate the metabolism laboratory and the ophthalmologic department so that the abnormal basal metabolism cases may be referred for ophthalmologic examinations and the abnormal cases first seen ophthalmologically may be referred for metabolic study. It has been extremely interesting to note with what consistency a careful ophthalmoscopic examination has made one able to "guess" the cases of disordered basal metabolism.

In this list are found:

7 cases with clear media, (four of these were cases of minus metabolism with endemic encephalitis. It is possible that the metabolic depression was acute, and had been of short duration.)
4 Vitreous opacities.
2 Remnants of pupillary membranes.
2 Ulcers of the cornea from smallpox pustules.
22 Specks or spokes.
22 Vacuoles.
20 both vacuoles and specks or spokes.
64 out of 78 or 82% had lens opacities, either vacuoles or striae or spokes.
61 were minus rates and 17 were plus.

Every case, excepting two, that has been sent to the metabolism laboratory because vacuoles were found, proved to have an abnormal metabolism.

It has not been the purpose in this study to reiterate the signs and symptoms of classical hyperthyroidism, nor to discuss the well known ocular findings in many of the other familiar advanced endocrine diseases with which the writers of our text-books have been conversant for decades. The lesions of basic importance are the first fine specks or spokes or vacuoles in the lens, the first depigmented area near the fovea or the first vitreous opacities; the very beginning of visible nutritional disorders, and endocrine disturbances. They warn us to seek the cause and to make a change in life's regime; to regain an equilibrium of body chemistry and possibly thus clear up the crystalline media which have revealed the incipient pathology. Are these analogous to the functional increase in blood pressure that preceeds arterial changes? Can we compare them to the Bergell test as related to impending glycosuria?

In addition to the finding of vacuoles or striae in lenses, one learns quickly to see endocrine stigmata in the skin and its appendages, in general structural abnormalities, in the color of the sclera, in the symptoms of easy fatiguability, headaches, vasomotor and neurologic disturbances, and in gonadal and secondary sex changes—all of which must be taken into account as a part of the pictures leading to correct diagnosis.

In the list of 78 cases, four have been patients who came in for refraction only, complaining of asthenopia, general lassitude and loss of appetite, and have remarked the third day after mydriasis (which consists of three discs, each containing one-fiftieth of a grain of homatropine and cocaine) that the eye symptoms were gone. These four cases were sent to the metabolism laboratory and were found to be hypometabolism cases. The minute doses of homatropine seemed to relieve for the time being the asthenopic symptoms referable to the eyes.

Three young adults with anisocoria were psychically optimistic, but physically fa-

tigued. Their basal metabolic test showed them also to have a hypometabolic rate. They were referred to the X-ray and chest departments on account of the anisocoria and were found to have active tuberculosis. Just what endocrine disturbance was present in these cases does not appear as yet.

In a few cases of passive congestion of the conjunctiva, adrenalin in very dilute wash, was very helpful. (One minim of 1-1000 adrenalin to 1 dram of boric acid solution). It was interesting to note that these were cases of low blood pressure, although well nourished and vigorous looking individuals. In the hypometabolic cases where the conjunctival adrenalin test was made there was a dilatation of the pupil of the eye tested.

Only one patient with vacuoles in the lens and the facies of hypometabolism returned from the laboratory test with a hypermetabolism rate. On further inquiry, he disclosed the fact that he had been taking iodine for many months. Might this not be a case of iodine thyroiditis?

Case L. C., is one of an obstinate corneal ulcer following smallpox in which there was a persistent uveitis, with secondary glaucoma menacing for eight months. From the first, routine local and constitutional treatments were given but were of small value. A hypodermic injection of tincture of iodine in almond oil in dosage recommended by Richard Kerby in an article published in the British Journal of Ophthalmology, 3448, Oct. 1, 1919, gave almost immediate relief. The photophobia which has been intense for many months disappeared in less than a week and the fasciculus of vessels crossing the limbus to the ever newly forming ulcer, melted away. The leucocyte count was taken after the fourth injection, and was increased 40% over normal. Because of the response to iodine, the patient was sent for a basal metabolism test. It was found to be —15. Thyroid extract was given at once and her general health improved greatly. After a few weeks of thyroid therapy, she complained of a rapid heart. The thyroid extract was discontinued. Her blood pressure was 110 at that time. It was then that the conjunctival adrenalin test was made and found to be positive, i. e., after three drops of adrenalin, 1.1000, in the conjunctival sac, the blanching persisted an hour and five minutes. A further study of this case is being made. In normal cases the effect of adrenalin passes in from 10 to 35 minutes.

At this point I would like to call attention to the pertinent question asked by Dr. Fridenberg in his essay on the "Eye and the Endocrine Organs." "Is the ciliary body one of the endocrine organs?"

Excerpts from a paper on "Crystalline Deposits," by F. Park Lewis, Buffalo, N. Y., in Jour. A. M. A. July 7, 1917, are extremely interesting:

"In every case of disease there must be a wide range of gradations, from the initial disturbance of nutrition, through the breaking down of structures, up to the final dissolution of the material into the elements of which it is composed. The end results are visible to the naked eye.

"Every living cell is a mass of protoplasm enclosed in a cell wall. It has in its substance proteins, lipoids and an enzyme. It is in fact a colloid in which crystalloid substances are readily soluble. Under the influence of chemical action, of heat, of electricity, of light or of radio active forces, the cell is split up into the component carbohydrates, the molecules forming new groupings through a long series, until the simpler forms are finally reached.

"Chemical relations of the most different kinds are simultaneously possible in the homogeneous ground substance of the cell."

"In order that we may visualize these cellular activities which are constantly taking place, we must think in terms of cell structure continuously related. With such colloids as the cornea, the membrane of Descemet, the lens capsule, the lens cortex, the vitreous, the hyaline membrane, the nerve cells of the retina and the membrane of Bruch, in contact with such colloids as the lymph and the blood plasma, with the aqueous filled with crystalloids in solution, with each cell penetrable by the toxins given off from bacteria or from chemical changes, we may begin to realize the enormous possibilities that are opened up to us, not only concerning the physiology and the pathology of the eye, but as to the therapy as well."

"The same laws govern the cell contents and its membrane as to osmosis and surface pressure as apply to other animal membranes, and while it is not yet proven, it is not at all improbable that the edema within the eye, whether it takes the form of an acute or a chronic, a simple or a fulminating glaucoma, may ultimately be found to be due to the swelling within the vitreous cells of soluble toxines, equally the atrophic changes in the lens fibres, like the fibrous and subsequently fatty changes in xanthelasma, or in the arcus senilis, are evidences of the presence of soluble toxins, which have disturbed the normal functioning of local cells."

One of the pharmacists at the institution, a man of good physique and who appears in good health, cut his hand with a piece of glass. The wound was very slow in healing. While this wound was still bandaged he had an attack of iritis in the left eye, and came to the ophthalmologic department. While the pupil was dilated with atropin, the fundus was examined and found to be normal except for a vacuole in the lens in the center of the field. He was sent to the metabolism laboratory and at two different times was found to have a minus 19 and minus 21 basal metabolic rate.

A daughter of a physician, a tall, thin, nervous, hyperthyrodism case was first diagnosed as such when she came in for refraction. She was taken to Florida for the winter months. While there she contracted typhoid, having a very severe attack. On her return this spring she was slower, calm, optimistic, happy, with hypometabolic rate.

The question may arise, do the vacuoles and striae and specks disappear after endocrine therapy. There has not been opportunity to follow any of the patients of this list for a long enough observation pe-

riod, but our records do show a few that were noted in earlier study within the past two years. Of these, three cases lost their vacuoles: one, a patient who had glycosuria early in 1920 and who is now sugar free; another, who has recovered from a chronic colitis; and the third, a hypometabolism case with tumor of the hypophysis in February 1920 has now, after the removal of the tumor at that time, and the regaining of his general health, a normal metabolic rate. He has had occasional recurrence of some of the same first symptoms as before. The field of vision is not as large as it was the first month after the operation. He has had a few peculiar attacks of partial blindness in the left eye which lasted a short time and disappeared. He is fatigued when climbing stairs. He is less freckled than formerly. The conjunctival adrenalin test is positive, the time of blanching being one hour and 20 minutes. The fundus examination now shows normal papillae, whereas before the operation the papillae showed definite evidence of the pressure of the tumor. Another interesting finding at this time is the pigment migration in the periphery of the retinae. This was not present a year ago. In this case the question is whether there is recurrence of the adenoma or simply endocrine imbalance of metabolism. It would seem that the latter is the case. This patient is to be kept under further observation.

It is encouraging to ophthalmologists to realize that such an intractable disease as retinitis pigmentosa can be treated beneficially by mixture of thyroid, adrenal and sodium cacodylate, as reported by S. B. Muncaster in Ophth. Record 21 p. 343, 1912, and that in keratoconus by the use of thymus and thyroids, sometimes adrenals, pancreas or gonads, positive results were obtained. N. Y. State Med. Jr. 1917-17.

An outstanding fact is that these investigations have shown that endocrine disturbances are far more numerous than has been suspected.

More might be said of the general findings and of the questions that arise in the study of these cases. More specific instances might be selected from the list of palpable coincidence of ocular and endocrine disturbance. I feel however that the study has just begun and earnestly hope that by multiplication of observers and cases and by coordination of ophthalmologist, internist and laboratory expert, a basis may be laid for the early diagnosis and a therapeutic guide for this most numerous class of cases.

DISCUSSION

DR. BERNSTEIN: I do not wish to throw cold water on such excellent work as the Doctor has done, but it seems to me rather premature to say much about basal metabolism as a means of diagnosis of conditions in the body. With regard to spicula in the lens, that has been gone into years ago by Hess. In the last few years one of my colleagues also thought he had something new about this which was wonderful. I am glad to say he has come to the conclusion it was due to the homatropine he had used, and on discontinuing the homatropine this disappeared. In many of these cases careful refraction will cause these reflex neurotic manifestations to disappear.

DR. BAKER: I do not feel competent to discuss this from the standpoint of experience, but I think this is something along the right track. I have been looking for the cause of cataract. From what we are discovering in connection with the subject of metabolism and the effect of the glands on the tissue changes of the body, it looks like a very promising field for us from which we may have some results in the future in regard to incipient cataract and prevent it from developing. If we can do this while the eye is still of use I think it will be the greatest advance we can look for in the future of ophthalmology.

DR. STEGMAN, (closing discussion): In the old text books hyperthyroidism is given as one of the etiologic factors of cataract. I have seen nothing, however in these texts about "hypo" conditions as a factor.

Our figures show that of the 78 cases with early lens changes, only 17 had plus metabolism rates, while the rather surprising number of 61 had minus metabolism rates. The significance of this ratio must appeal to the ophthalmologist who does not have ready access to a laboratory where his cases may have the basal metabolism test. The chances are more than three to one that the detection of the early lens changes indicated are due to a hypometabolic rate. A trial of thyroid or iodine under careful clinical observation will soon convince the observer of its value ejucundibus. The advocacy of this rather empiric trial of endocrine therapy is justified only as a means of smitulating greater interest in this important subject, and must be attempted only under careful clinical supervision.

THE SPHENOID SINUS.*

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Reports and discussions of diseases of the sphenoid sinus have been few and brief in the past. It requires but a cursory examination of the literature and surgical development of rhinology during the past 25 years, to observe a parallel between increased interest in sphenoid disease and the increase in radical surgery. Whatever opinion we may hold in regard to the so-called radical measures increasingly employed, it is certain that such procedures have gradually lifted the veil from this remotely situated structure. The anatomists frightened men away from it up to the time of Killian, Hajek, Halle and others. Only those men of this generation who have especially in-

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terested themselves in the anatomy of the sinus labyrinth and its frequent variations —and have made repeated dissections of the parts, thus obtaining thorough mental pictures of their common and uncommon relationships, are investigating its condition as a diagnostic routine and adequately attacking it surgically when found diseased. It is not uncommon to hear prominent rhinologists admitting that they never attempt to enter this sinus because they consider it is not frequently diseased and because it is so dangerously situated. This only indicates that they have not interested themselves in diseases of accessory sinuses in general but only in those comparatively easy of access. After 12 years' experience and some success in an effort to relieve baffling head symptoms, the writer is convinced that sphenoid complications are not only fairly common but quite as important as they are obscure, often causing much pain and disability which may be relieved with no danger by one who has acquainted himself with the anatomy and pathology of the region and that the surgery is less radical than is often supposed.

All of us are familiar with the normal anatomy of the sphenoid sinus. There are, of course, many noteworthy variation of which a full knowledge is necessary in order to do safely the painstaking work which this surgery demands. (These departures from the normal are ably presented in the following texts: Schaeffer—"The Nose and Olfactory Organs;" Sluder, "Headaches and Eye Disorders of Nasal Origin," and the last edition of Gray's Anatomy.) This sinus is in reality easy of access in the vast majority of cases. All that is necessary is to shrink the nasal mucosa with cocain and adrenalin, and if it is not possible to pass a straight probe into the ostium following a line passing over the anterior nasal spine and skirting a point on the lower border of the middle turbinate, dividing the posterior from the middle third approximately, one may bend the probe in such a manner that it will pass around the posterior end of the middle turbinate and enter the ostium at a right angle to the face of the sphenoid.

Frequently it will be found in the course of this examination that by the simple passing of the probe cases experience immediate relief from headache of a debilitating character, notably those, for instance, where the oculist has been unable to relieve by a careful adjustment of lenses. Many of these sudden and complete reliefs are brought about without any cocainization preliminary to the passage of the probe into the sinus, thus ruling out any possible influence of the anaesthetic in the prompt relief from pain. Many times the same relief will occur in cases where the nose does not show presence of pus in the middle or superior meatus, either by anterior or posterior rhinoscopy.

Some years ago the use of the small silver probe in routine examination was determined upon by the writer and his not infrequent experience in giving patients relief from headache from which they had heretofore discovered no relief has fully justified the measure. After this the writer had numerous experiences of suddenly relieving incapacitating headaches by the simple passage of a probe through the sphenoidal ostium. And before Sluders' remarkable book describing vacuum sinus headache he was unable to account with previous authority for this experience in the instances where pus was not found in the region of the superior meatus. Since this able authority has been added to his personal experience the writer of this paper has no doubt that in many of these cases relief was due simply to the sudden admission of air into the sinus, relieving the partial vacuum. Thus the absence of pus in the superior meatus should not deter us from making an examination. It is a dangerous dictum that all sphenoidal sinus suppuration is accompanied by ethmoidal suppuration and vice versa. Better cultivate the attitude that each and every sinus is not only an anatomical entity but may be a pathological entity as well. The latter conception will make for thoroughness, whereas the former breeds laxity.

A compilation of accurate statistics from case records has been deemed unnecessary for this paper but a complete record evidence is possessed by the writer and is the basis of his appeal for the examination of the sphenoid in all cases of recurrent headaches regardless of type. Location of pain in sphenoid affections is most variable in spite of the so-called characteristic headache which has been described by others. Patients sometimes complain of temporal pain alone, often bi-temporal, also a retro-orbital pressure pain accompanied by a feeling of stiffness or lameness upon moving the eye sometimes pain is parietal, occipital and occasionally frontal, or vertical, parietal and occipital. While some complain of headache in all these regions at the same time, the same individual may relate to you that it is sometimes in only one of these locations or will describe various combinations.

The type of the pain may vary from a slight discomfort to the most profound, binding and bursting ache, actually prostrating the patient. They occasionally complain of nausea, vomiting and vertigo. Without doubt routine investigation of the sphenoid sinuses would noticeably reduce the number of so-called cases of migraine.

Surgical relief of these conditions can be described very briefly. In the cases where simple probing of the sinus does not suffice, it may be found necessary, due to anatomical considerations, to push aside or crush the middle turbinate, or remove the posterior portion of it in order to gain free access to the ostium. A probe then may be inserted and the anterio-posterior diameter ascertained so that one may judge the degree of care necessary in inserting tip of forceps. Next insert the probe ended tip of the punch forceps through the ostium, the ordinary type of sphenoid punch forceps—cutting on the pull—being the instrument of choice. Care is taken to enlarge the ostium downward and toward median line rather than externally, thus avoiding the danger of running into atypically placed vessels which may cause annoying hemorrhage, invasion of interior of skull or injury to structures essential to vision. As a rule packing is not employed, and has seldom been found necessary to control late primary or secondary bleeding.

The after care consists of inspection daily for a short time, possibly irrigation with normal saline solution, and prevention of the development of granulations around the enlarged ostium, when they appear, by means of the ordinary chemical caustics.

This article has purposely not dealt with the inflammatory, degenerative, hyperplastic, and neoplastic diseases of which this sinus is occasionally the site. In the main the writer has had but one purpose in view and that was the encouragement of the routine examination of this too frequently neglected, bony walled mucous membrane lined pneumatic structure.

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INDICATIONS AND CONTRAINDICATIONS FOR THE USE OF PITUITRIN IN OBSTETRICS.*

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In the Department of Obstetrics and Gynecology at the University Hospital pituitary extract has been used since the year 1911 without any very serious accidents directly attributable to the drug. It has been administered for the induction of labor, during labor and also during the puerperium. In 1914, Seeley analyzed forty cases from that clinic and although much has since been learned about this drug, the conclusions which he reached are for the most part still accepted as correct. In 150 additional cases an attempt has been made to elaborate on and to extend the use of this drug.

The preparation used during the majority of our experiments is that of pituitrin, manufactured by Parke, Davis and Company of Detroit. Occasionally it has been necessary to substitute "pituitol" a Hollister laboratory preparation. The action of the two preparations in as far as our observations have advanced has been identical. Surgical pituitrin also marketed by Parke, Davis and Company has been used, but its potency is approximately twice that of the obstetrical preparation and therefore when used not more than one-half the customary dose has been administered.

The dosage has varied according to the indication for its use from three minims to one cubic centimeter. Our maximum factional dosage has never been more than three cubic centimeters in 24 hours. Watson, in a recent paper, has advocated much greater dosage, having administered in cases of induction of labor as much as eight to ten and one-half cubic centimeters in one-half cubic centimeters doses at intervals of one-half hour, while Bandler has given 12 to 14 cubic centimeters in 24 hours without disastrous results. In every case the drug has been administered intramuscularly.

INDUCTION OF LABOR.

Forty-five individual cases ranging from the eighth month of pregnancy to three

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weeks post-maturity were subjected to induction of labor. Thirty-one, or, sixty-nine per cent responded to one of the methods mentioned below. Of these 31 cases in 26 or 65 per cent, labor was brought on by means of a combination of castor oil, quinine and pituitrin. Five were induced by the insertion of the Voorhees bag and repeated doses of pituitrin. Fourteen, or 35 per cent, did not respond sufficiently to the combination of castor oil, quinine and pituitrin to bring on labor.

The method, which in our hands proved most successful, was the administration by mouth of one to two ounces of oleum ricini, followed two hours later by 10 grains of quinine sulphate. The quinine was repeated and at the time of the last dose of quinine five minims of pituitrin were injected intramuscularly, followed two hours later by a second and sometimes a third dose of pituitary extract. It is most important that the pituitrin be repeatedly administered in order to secure a completion of the onset of the labor. This combination of drugs brings about a maximum oxytocic action on the uterus.

As the gravida reaches maturity this method of induction of labor follows a gradual rising curve so that at maturity it reaches its apex. At eight months two attempts were unsuccessful. At eight and one-half months one attempt was unsuccessful, at nine and one-quarter months one attempt was successful while four were unsuccessful, at nine and one-half months two were successful while nine were unsuccessful, at nine and three-quarters months one was successful and six were unsuccessful, at ten months nineteen were successful while six were unsuccessful, at ten and one-quarter months one was successful, at ten and one-half months five were successful and at eleven months one was successful. Judging from these results as well as from those of Pauliot and others it is quite apparent that the irritability of the uterus and its responses to oxytocic drugs increases as term is approached. Furthermore it can be concluded that for bringing on therapeutic abortion or premature labor pituitary extract alone or in combination with other drugs is practically useless.

Following the introduction of Voorhees bags for the induction of labor one can administer small doses of pituitrin and thereby markedly shorten the onset of labor pains. Likewise in cases of premature rupture of the membranes the drug will stimulate the uterus to activity when otherwise it might lie dormant for hours and even days. It is also of value in differentiating false from true labor pains. A few minims of the drug will augment true pains so that there is no further doubt about the status of the uterine irritability.

FIRST STAGE OF LABOR.

Our experience with this drug during the first stage of labor has been a very limited one. It should never be given to hasten a normal first stage. Except for those rare cases of primary uterine inertia its use is most dangerous. Mundell has collected from the literature about four thousand cases in which pituitrin was used. He found many cases of ruptured uterus and fetal death as well as an occasional case of maternal death. Tetanus uteri, premature separation of the placenta and post partum hemorrhage were even more common.

Primary uterine inertia can and should be recognized before labor. The uterus is atonic and flabby and indifferent to stimulation; the blood pressure is generally low and the calcium index is subnormal. Bell advises that such a state be treated by oral administration of calcium salts and the dried extract of the posterior lobe (gr. V. t. i. d.) or the whole gland (gr. XX t. i. d.) When the complication is not diagnosed until after the onset of labor, very small doses of pituitrin may be injected in not more than three minims doses and not repeated more than once.

SECOND STAGE OF LABOR.

Madill and Allen, Jaeger, McNeile, Maxwell and Seeley have proven both experimentally as well as clinically that rhythmical and forcible uterine contractions have been re-established almost immediately following the intramuscular injection of pituitary extract. Exceptionally contractions are not re-established. In such cases delivery must be completed by instrumental means. There is no doubt that the judicious use of pituitary extract has saved many mothers hours of exhaustion and waiting and the accoucher much worry and loss of sleep. But one cannot emphasize too frequently the prerequisites for the use of pituitrin. No man should dare to give pituitary extract until the head has entered the pelvis, the cervix has been fully dilated or is dilatable and all other obstructions for delivery have been removed.

Anyone associated with a large obstetrical clinic in a metropolis or with a gynecological clinic has seen the early and late effects of pituitary extract in the damage it

indirectly causes to the maternal soft parts. Such conditions as extensive lacerations of the cervix with and without hemorrhage, second and third degree lacerations of the perineum, rolling out and evulsion of the anterior vaginal wall with stretching and tearing of the ligaments of the bladder are all more common when the second stage has been precipitated by the oxytocic. Therefore it is advisable that before the administration of the drug all preparations be made for delivery and an anesthetist be available. Then if the uterine contractions become tempestuous they can be controlled by deep anesthesia and the advance of the head retarded by the accoucheur. Further a rigid or high perineum can then be episiotomized or manually dilated.

It has been suggested to the writer, after having observed Doctor Irving W. Potter "iron out" a perineum for selective version and extraction that his technic can be applied to the vulval outlet of primiparae. After completion of the first stage of labor and with the patient fully anesthetized the perineum, with the aid of green soap, can be completely dilated. Then the patient can be kept in the obstetrical degree of anesthesia and the labor completed by the administration of 0.5 cubic centimeters of pituitrin. This procedure has been carried out in a limited number of cases but cannot as yet be recommended for adoption.

Bell has advocated the combining of pituitrin with scopolamine-pantopon anesthesia (twilight sleep) for shortening the period of labor. In our hands twilight sleep has not been a success but in those cases with which we have had experience the oxytocic is of value in completing the prolonged labor. Stein's results in combining nitrous oxide and pituitrin have been excellent. We are inclined to concur with him in regard to this technic. Bandler has advantageously used chloroform and pituitrin for the same purpose.

Any practitioner who has used pituitary extract in either the first or second stage of labor must have at some time in his career found it necessary, because of an abnormal fetal heart to complete a delivery with forceps. Frequently the infant is in a state of livid or pallid asphyxia. Occasionally it is stillborn and sometimes it does not show symptoms until later in life. The pituitrin circulating in the maternal blood causes rapid recurrences and more forceful uterine contractions, shutting off the placental circulation and also directly compressing the fetus. Kerley, Holt, Heard, Norris and Chapin and Pisch have called our attention to the late effects of pituitary extract on infants. They have found in many of these cases at autopsy meningeal and cerebral hemorrhages which in the living child lead to paralysis, epilepsy and idiocy. In view of these findings and the frequent disastrous effects to the mother should we not as medical men be most conservative in the use of this popular drug?

THIRD STAGE OF LABOR.

In one hundred and thirty-five consecutive cases, one cubic centimeter of pituitrin has been injected intramuscularly immediately following the completion of the second stage of labor. Our results in these cases have been so uniform and offer such brilliant hopes for the future that we feel justified in reporting them at the present time. The amount of blood lost during the third stage, the length of the third stage, the method of expression and the mechanism of separation of the placenta and the frequency of postpartum hemorrhage have been recorded and analyzed.

The loss of blood was accurately measured by placing a flat douche pan under the patient as soon as the baby was delivered. The hemorrhage occurring before the separation of the placenta, at the time of separation and that after the separation was used in the estimation. The loss averaged 255 cubic centimeters for the normal cases. The length of the third stage averaged 12 1-10 minutes. The separation of the placentae in 69 per cent of the cases was by the Schultze mechanism, the fetal surface appearing first at the outlet. Two adherent placentae were manually removed. The delivery of the placenta was completed in 94 per cent of the cases by modified Crede expression. There were two expressions by true Crede and two by the Michael Reese method.

When one compares these results with controls and also with the text-book picture of the third stage of labor, one observes that the third stage of labor has been materially influenced by the pituitrin. The loss of blood was reduced from 351 cubic centimeters in the controls and 300 to 500 cubic centimeters (Williams text-book) to 255 cubic centimeters in our pituitrin cases. The third stage was shortened from 24 minutes in the controls and 20 to 30 minutes (De Lee and Williams text-book) to 12 1-10 minutes. The methods of separation and expression were kept in the same ratio one to another as those of the controls as well as those of the text books. The frequency of

adherent placentae and complications might appear unusually high but it must be remembered that approximately 20 per cent of our pregnancies are complicated by lues.

All obstetricians will grant that one of the most imperative points in conducting a labor is the conservation of blood and that it is considered the one greatest asset to the patient during her future puerperium. Therefore if pituitrin will conserve this valuable asset then we believe that it should be used. There is no doubt in the minds of those who have used pituitrin for facilitating the completion of the third stage of labor that it gives to the accoucheur a feeling of safey in regard to the loss of blood and immediate expulsion of the placenta. He knows that the uterus will remain contracted and that in case of necessity the uterine musculature has already been sensitized to oxytocics such as ergone.

Hour glass contractions have been reported following the administration of pituitary extract during the third stage of labor. Such an accident has never happened to us. It is possible but not probable that in partially adherent placentae especially in premature labors that this complication might occur. We believe, however, that the intermittent retraction and contraction of the uterus would have a tendency to free such placentae.

POSTPARTUM HEMORRHAGE.

Pituitary extract as an etiologic factor in the causation of postpartum hemorrhage was not in our hands an important one. When the drug brings on tetanic contractions of the uterus followed by atony then of course it can be blamed for the pathology. Fortunately, because pituitrin is only rarely used during the first and second stages this has never been our experience.

For the treatment of postpartum hemorrhage the usual method of intramuscular injection of one cubic centimeter of the solution was used. De Lee suggests in such cases that the drug be injected directly through the abdominal wall into the uterine muscle. Naturally the hemostatic effect is much more rapid. Its action on the uterine muscle is not of as long a duration as ergone preparations but the length of time necessary for it to circulate in the arterial system to stimulate the uterus to contract is three to five minutes while intramuscular injections of ergot take some 15 to 20 minutes.

CESAREAN SECTION.

Pituitary extract has been used with most beneficial results to control hemorrhage during Cesarean section. Formerly pituitrin was administered by the usual method of intramuscular injection at the time of, or immediately after the removal of the placenta. More recently operators have after the removal of the placenta infiltrated the uterine incision with one to two cubic centimeters of the extract. When used in his manner the closure of the uterine wound is greatly facilitated. Bleeding from the large sinuses is reduced to a minimum. An excellent procedure recommended by many Cesarean sectionists is to supplement the action of pituitrin by injecting intramuscularly at the beginning of the operation one of the sterile preparations of ergot. Then one secures besides the immediate effect of the pituitrin the lasting and tetanic action of the ergot.

During the postoperative period of Cesarean section cases and also the puerperium of any case complicated by subinvolution, acute dilatation of the stomach, intestinal paresis and atony of the bladder, repeated small doses of either the obstetrical or surgical preparation of pituitary extract may be used most efficaciously.

Finally, there are certain well defined contraindications to the use of pituitrin. It is realized that the majority of the medical profession practising obstetrics are conversant with these contraindications but even so because of the many disasters which have in the past befallen mothers and infants, it again seems necessary to mention them. They may be briefly outlined under the following headings:

CONTRAINDICATIONS.

1. When labor is progressing normally pituitrin has no place during the first and second stages.
2. It should never be given unless the position and presentation of the fetus are known. In malpositions such as oblique and transverse positions, persistent mentum and occiput posterior and marked deflexion attitudes, the uterus may be ruptured or the fetus suffocated by the violent contractions induced by the oxytocic.
3. When there is undue disproportion between the fetal passenger and the maternal passage pituitrin should not be given. It is best not to make use of the oxytocic until the head is engaged, the membranes ruptured, and the cervix fully dilated or dilatable and all preparations made for a rapid delivery. In elderly primiparae the drug must be used with caution.
4. Uteri with scars or with any inherent weakness should not be subjected to the use of pituitrin.

5. Feti in utero which show by a change in the fetal heart rate the effects of hypercarbonization due to a prolonged labor or premature separation of the placenta should not be further compressed and injured by the continuous and tetanic uterine contractions so frequent following the administration of the extract.

6. If the mother is the subject of disease of the heart, arteries or kidneys, such as are found in arteriosclerosis and eclampsia the preparation is dangerous and may be fatal.

CONCLUSIONS.

1. At maturity labor can be induced in about 65 per cent of the cases by oral administration of castor oil, quinine and repeated small intramuscular injections of pituitary extract.

2. For the treatment of primary inertia the extract should be used most cautiously and only in very small doses.

3. Judiciously employed pituitary extract can be used to great advantage in cases of secondary inertia.

4. The third stage of labor can be most favorably influenced by the intramuscular injection of one cubic centimeter of the extract.

5. Pituitary extract should be included in the obstetricians armamentarium for combating postpartum hemorrhage.

6. The extract facilitates the closure of the uterine wound in cases of Cesarean section.

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DISCUSSION

DR. L. W. HAYNES, Detroit: I believe Dr. Cron's paper is admirable. I think those of us who are doing obstetrics have more and more regard for this drug every year. I began to use it a good many years ago, and at that time never gave less than 1 c. c. at a dose. From the beginning we were very careful to use it at the proper time. I never used it in the first stage and I think each year we realize more and more that it should not be used in that stage because of the unfortunate accidents read about in the literature. As I say, I first used 1 c. c. and finally, as we had reports of bad results, I cut down the dose to one-half that amount, and within the last year have used 2 to 4 minims at a dose, repeating it at 20 minutes intervals. I agree with Dr. Cron about using it at the third stage, and think it is good to use it for quick action and then follow it up with ergot.

I had a case just a few weeks ago that I think will be of interest to you. It was the first case I have had where I noticed any bad results. The patient was a multipara with a fairly easy history of previous pregnancies. She had been in labor for eight or ten hours, the contractions were pretty weak, the head was high up and by rectal examination I could not determine the exact position. I decided to give a small dose of pituitrin to help in determining the position. I gave her four minims and within a few minutes she complained of being very ill. Within a few seconds more she became unconscious, the pupils dilated and she had slight muscular twitchings. I took her to the hospital and under slight anesthesia delivered the baby. The woman was unconscious for two hours altogether. She had had no complications, the urine was normal at the time of delivery, so this was a typical anaphylactic shock caused by four minims of the drug.

DR. ELISHA W. CASTER, Highland Park: I would like to ask Dr. Cron what he considers the proper dose to be, and what his observation has been as to the length of the effect produced by the drug.

DR. REUBEN PETERSON, Ann Arbor: I have nothing to criticize in the paper itself. All I can say is that such papers as these lead us to be more careful with the use of this drug. Any man who has injected this drug into the uterus after the removal of the fetus by abdominal cesarean section has seen what a powerful action it has upon the uterus. We must be careful and follow out with the greatest care the contraindications as Dr. Cron has outlined them.

Dr. Cron at luncheon was telling me about a case he had at the time I left Ann Arbor on Tuesday. This is the kind of a case where in desperation one is inclined to give pituitrin. A woman with a borderline pelvis had been in labor for 36 or more hours. The fetal heart was in good shape, or was fair, and after all this time the membranes ruptured and he had to do a version. After preliminary ironing out of the perineum by the Potter method he had great difficulty in delivering the after-coming head. Those are the cases in which it is very dangerous and where the obstetrician is tempted to use this powerful drug. I have regretted a number of times yielding to the temptation to give the drug because of the results obtained. In other words, the case did not conform to one of his directions for giving the drug. Here was a definite obstruction to labor. We should give the patient the benefit of the doubt and not give the drug unless we are sure there is no obstruction. Here was a slightly flat pelvis and if pituitrin had been given much harm would have been done. I remember once giving this drug after making an incision for an abdominal Cesarean section, and before I could get the child out it was terribly asphyxiated and I had great trouble in resuscitation.

. It is interesting to study Dr. Cron's work in the inductions of labor at term. I read Watson's paper and was horrified at the very large amount of this drug he advocated. On coming home from that meeting I told Dr. Cron about it, and told him if he was going to try it out at the clinic to avoid these massive doses. Dr. Cron has obtained just as good results, so far as I can see, by safe doses of the drug.

One thing we should remember is to use pituitrin in postpartum hemorrhage in combination with ergot. The action of ergot is long delayed and the pituitrin acts rapidly. Together they are most

valuable drugs in obstetrics. And yet, pituitrin is a most dangerous drug.

If we will take this paper and study it so that we know when to give it and when to refrain from giving it I know of nothing more valuable in the practice of obstetrics in the last 20 years.

DR. R. S. CRON, Ann Arbor, (closing the discussion:) I was very interested to learn of Dr. Haynes' case of anaphylaxis. I have never seen anaphylaxis follow injections of pituitrin. Dr Haynes certainly gave a small enough dose. That is just about what we administer in cases of secondary inertia. The dosage depends entirely on what you are using it for. If for the induction of labor, then such a dose as five minims is sufficient and probably the maximum likewise for secondary inertia. For postpartum hemorrhage one can administer 1 c. c. without any trouble arising from the drug. The length of action also depends somewhat upon the amount. The small dose of five minims has a duration of from 20 to 30 minutes. The large dose for certainly not longer than 40 to 60 minutes. After an hour one could adminster for the induction of labor a second dose of pituitrin without giving any trouble. For the treatment of secondary inertia one could after two hours administer the second dose, provided there is no obstruction. That is the most important thing to remember in the use of the drug.

The case which Dr. Peterson outlined which came to my lot a few days ago is like a good many others. When one is associated with a large clinic where cases come in as an emergency one sees the worst results of pituitrin. I have fixed in my mind several cases, one of which I will briefly outline. A multipara, four, who had been in labor a number of days. The attending physicians had administered pituitrin, even before contractions were well established. As a result after the second injection of pituitrin she was very uncomfortable. They attempted to deliver her by forceps, but we never delivered her because she died on the operating table. It was a case of rupture of the uterus and occurred very shortly after they attempted to deliver her.

I wish some men who are connected with the clinics in the city, with an opportunity to experiment on patients in the charity hospitals, would attempt to use the drug during the third stage of labor to see whether the results obtained would compare favorably with ours. Dr. Potter used the drug when he was in Ann Arbor, during this stage of labor, and reported that he had been using it as a routine at this time. He spoke favorably of it. We certainly feel safer about the completion of the third stage, especially in regard to the loss of blood.

SCARLET FEVER QUARANTINE*

(Two years experience with the 21 day period.)

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From the announced subject of this paper it might seem that all cases of scarlet fever had been under only a 21-day quarantine.

I wish to relieve your minds from the beginning in this regard for it is not my intention to make any such rash statements and then try to prove them to be so.

Rather the two years' experience has been with a minimum quarantine of 21 days—and in a few selected cases the quarantine period has been even less, as will be shown later in the paper.

Unfortunately the series of cases is comparatively small as one might expect with a city of the population of about 40,000 people.

Also a series of cases which had been hospitalized would perhaps be better for the foundation of such a paper, but as the series is small it was deemed best to include all cases coming under observation.

A few years ago while attending a number of scarlet fever cases in which the disease was running a very mild course—I was confronted with the idea—"Why should these cases be quarantined as long as the cases which have been unusually severe but which make a rapid recovery and have no glandular or other disturbances?"

Acting upon this idea the nurses were instructd to note very carefully these cases—the severity of the disease and on subsequent calls to ascertain whether or not the patient had had any discharge glands, ears or recurrent throat complications.

We have tried to keep a nursing force with the Board of Health sufficiently large to make several calls if need be on these cases and they have been very alert to ascertain any complications that might exist.

In many instances alleged cases have no connections with the discharged case.

It is not an infrequent occurrence for a child to be admitted to a scarlet ward a few hours before his brother or sister is discharged. If these discharged patients had arrival at the homes 24 to 48 hours earlier, as in many instances they would, if they had been discharged as per the wishes of the parents or if the parents had come for them as soon as notified, the second case would have been considered a return case. This also should be taken into consideration on data that is submitted.

It may be possible for the infection to exist long after a minimum quarantine period or after convalesence has been established. This applies in my estimation only to those cases with complications such as ear, or glandular infction and also inflamed tonsils and mucous membranes.

The rule we have tried to follow has been a 21-day minimum quarantine in the uncomplicated cases and one week additional restriction before attending schools or other assemblies. Also if possible to isolate or remove from the primary case all exposed children and hold for one week for observation.

There are three principal reasons why

*Read at 56th Annual Meeting, Bay City, May, 1921.

scarlet fever is so prevalent in the cities:

1. Many mild cases are not recognized as scarlet fever—We are all aware of that type of Spinal Adjustors who do not believe in germ diseases, and until a law is enacted prohibiting the chiropractors from treating infectious or contagious diseases, scarlet fever will still prevail.

2. Failure to report contagious diseases by that group of moralists who do not only disbelieve the germ theory but discount all thought of diseases and have a criminal disregard for quarantine—the Christian Scientist's.

3. Return to school. Children may return to schools while infectious, but with medical inspection in the schools if properly conducted may be an efficient means of limiting the spread of scarlet fever.

Scarlet fever varies more in intensity than any other exanthemia, and this is another reason why the disease is so prevalent and many cases are not recognized and therefore not isolated.

Many of the health authorities do not appreciate the fact that the desquamation is not positive evidence of scarlet fever and it should be well to remember that nearly all the exythemata desquamate to a greater or less extent—also some patients ill with scarlet fever do not desquamate to any extent and it therefore follows that too much stress should not be placed on the presence or absence of the condition.

Desquamation itself, in my opinion, is not a means of spreading the disease but the desquamation when contaminated by the mucous discharge from the ears, nose and throat or broken down glands, may become an infectious agent.

Isolation is the one thing which must be depended upon to stamp out the disease, as we have no specific with which to combat it.

In endeavoring to arrive at a definite conclusion as to the necessary length of detention in scarlet fever there are two points which should help to determine the period:

1. The intensity of the disease. The mucous membranes in the severe cases are affected more severely and the mucous discharge will last longer.

2. Glandular involvement with discharges. This is a factor which should determine a much longer quarantine.

With the facts already stated we have tried to appreciate the position of the people quarantined and at the same time to follow a routine which would be in no way open to criticism.

In the following data it will be noted that this method has been used to a greater or less extent for a period of four years but with particular attention directed to a 21 period for the past two years, 1919 and 1920.

Also in this data will be shown the number of secondary cases and the time elapsing between the so-called exposures. As is noted some of these cases came down with the disease after a 10-day period from exposure. I think that the present consensus of opinion is that the incubation period for scarlet fever is from one to 10 days and more often three to five days.

If this 10-day period is taken as a limit for incubation period some of the cases reported in this paper would not be classified as secondary cases.

Upon looking over the quarantine periods given by several of the State Boards of Health, I find that the minimum period varies to a great extent. One state has a minimum quarantine of 14 days, nine states a 21-day minimum and the remainder from 28 days to 35 days as a minimum.

1917

Estimated Population 37,000

Days Quar.	Cases	Cases by months	
18	7	Jan.	26
19	17		
20	23	Feb.	18
21	8		
22	10	Mar.	62
23	10		
24	18	April	51
25	10		
26	20	May	25
27	15		
28	15	June	10
29	8		
30	10	July	1
31	15		
32	10	Aug.	2
33	5		
34	8	Sept.	6
35	9		
36	2	Oct.	12
37	1		
38	4	Nov.	16
39	1		
40	2	Dec.	14
41	1		
46	1	Four cases removed to H. Keifer Hospital, Detroit.	
55	3		
57	1		
72	2		
96	1		

Total days 6,552
Total cases 238
Average .....23 days

1918

Estimated Population 38,000

Days Quar.	Cases	Cases by months	
18	1	Jan.	13
19	4		
20	5	Feb.	11
21	13		
22	4	Mar.	8
23	5		
25	3	April	13
26	6		
27	6	May	8
28	5		
29	3	June	6
30	5		
31	3	July	4
32	1		
33	2	Aug.	3
34	2		
35	2	Sept.	1
36	1		
39	2	Oct.	5
42	2		
44	1	Nov.	2
49	1	Dec.	6

Three cases to H. Keifer Hospital.

Total days 1,970
Total cases 80
Average .....24 days

1919

Estimated Population 39,000

Days Quar.	Cases	Cases by months	
3	1	Jan.	7
16	1		
17	1	Feb.	5
18	1		
19	7	Mar.	12
20	8		
21	18	April	7
22	6		
23	11	May	15
24	8		
25	3	June	11
26	5		
27	4	July	7
28	4		
29	4	Aug.	5
30	3		
31	4	Sept.	8
32	2		
33	2	Oct.	4
34	2		
35	2	Nov.	15
36	3		
37	0	Dec.	16
38	1		
39	4		
40	0	Four cases to H. Keifer Hospital	
41	1		
42	1		
50	1		

Total days 2,920
Total cases 112
Average .....26 days

1920

Estimated Population 43,000

Days Quar.	Cases	Cases by months	
4	1	Jan.	27
7	1		
17	1	Feb.	24
18	3		
19	4	Mar.	30
20	19		
21	25	April	23
22	19		
23	17	May	8
24	9		
25	8	June	9
26	10		
27	10	July	4
28	4		
29	8	Aug.	3
30	7		
31	3	Sept.	4
32	6		
33	3	Oct.	11
34	4		
35	1	Nov.	9
36	2		
37	1	Dec.	21
38	1		
44	1		
45	2		
46	1		
47	1		
54	1		

Total days 4,134
Total cases 173
Average .....23 days

1917

	Onset.	Quar.	Disch.	Days
(1) 221 Colorado—				
Donelly, James	11-30-17	12- 4-17	12-31-17	31
Ellen	1- 6-18	1- 8-18	2- 4-18	29
Complications, None.				
(2) 235 Florence—				
Gardhouse, Norine	9-13-17	9-17-17	10-11-17	28
Clarice	9-25-17	1-17-17	10-11-17	16
Lester	10-22-17	11-26-17	11-22-17	30
Complications Removed.				
(3) 348 Highland—				
Alexander, Agnes	1- 7-17	1- 8-17	1-29-17	22
	2- 3-17	2- 6-17	2-21-17	18
Complications Removed.				
(4) 142 Monterey—				
Roland, Phillip	10-22-17	10-25-17	11-23-17	32
Betty Ann	10-30-17	10-25-17	11-23-17	24
Mary	10-27-17	10-25-17	11-23-17	27
Henry	12- 3-17	12- 5-17	1- 3-18	31
Complications Removed.				
(5) 150 Monterey—				
VanSchaak, Gordon	11-12-17	11-12-17	12-11-17	29
Raymond	12-13-17	12-14-17	1-12-17	30
Complications, None.				

(1) 6 days elapsed between cases—31-day quarantine.
(2) 11 days elapsed between cases—28-day quarantine.
(3) 6 days elapsed between cases—22-day quarantine.
(4) 10 days elapsed between cases—32-day quarantine.
(5) 2 days elapsed between cases—29-day quarantine.

1918

	Onset.	Quar.	Disch.	Days
(1) 184 Waverly—				
Mengel, Marion	2-17-18	2-19-18	3-12-18	23
Curtis	3-13-18	3-18-18	4- 9-18	27
Complications—Swelling of glands.				
(2) 8½ North—				
Fick, Walter	2- 4-18	2- 6-18	2-26-18	22
Amy	3- 6-18	3- 9-18	4- 6-18	18
Complications Removed.				
(3) 210 Tuxedo—				
Davenport, Vivian	5-13-18	5-18-18	6- 4-18	21
Kellogg, Mary	6-23-18	6-29-18	7-19-18	26
(4) 238 W. Grand—				
Stewart, James	2- 2-18	2- 4-18	3- 2-18	28
Doris	3-19-18	3-21-18	4-18-18	30
Gland Complications.				

(1) 1 day elapsed between cases—23-day quarantine.
(2) 8 days elapsed between cases—22-day quarantine.
(3) 19 days elapsed between cases—21-day quarantine.
(4) 17 days elapsed between cases—28-day quarantine.

1919

	Onset.	Quar.	Disch.	Days
(1) 45 Beresford—				
Finch—Virginia	12- 5-19	12-11-19	12-31-19	26
Roy	1- 4-20	1- 8-20	1-30-20	26
Complications—Swollen glands.				
(2) 233 Ferris—				
Hommell, Alta	12-24-19	12-26-19	1- 7-20	18
Pallister, Milo	1-19-20	1-21-20	2-10-20	21
Complications, None.				
(3) 394 Louise—				
Simmer, Joseph	2-12-19	2-15-19	3-15-19	31
Helen	3-17-19	3-19-19	4-19-19	33
Complications Glands and ears.				
(4) 247 LaBelle—				
Koltonow, Elizabeth	12-29-19	12-31-19	1-19-20	21
Harry	1-28-20	1-30-20	2-21-20	24
Herman	1-29-20	1-30-20	2-21-20	23
Complications, None.				
(5) 136 Pilgrim—				
Williams, Franklin	11- 3-19	11- 5-19	11-28-19	25
Nealy, Harry	12-18-19	12-20-19	1- 8-20	20
Complications Removed.				

(1) 4 days elapsed between cases—26-day quarantine.
(2) 12 days elapsed between cases—18-day quarantine.
(3) 2 days elapsed between cases—31-day quarantine.
(4) 10 days elapsed between cases—21-day quarantine.
(5) 20 days elapsed between cases—25-day quarantine.

1920

	Onset.	Quar.	Disch.	Days
(1) 219 Gerald—				
Davison, Ethel	1-27-20	1-29-20	2-20-20	24
Godfrey	3- 6-20	3-13-20	4- 7-20	32
Complications, None.				
(2) 139 Ferris—				
Doak, William	3-26-20	3-28-20	4-19-20	24
244 Jos. Campau—				
Muriel	4-24-20	4-26-20	5-22-20	28
Complications—Ear and gland.				
(3) 137 Tennyson—				
McInerney, Francis	12-19-20	12-22-20	1-15-20	27
Charles	1-25-21			
Complications, None.				

(1) 17 days elapsed between cases—24-day quarantine.
(2) 5 days elapsed between cases—24-day quarantine.
(3) 10 days elapsed between cases—27-day quarantine.

In conclusion, I wish to say that from the material presented, I believe that with the uncomplicated cases of scarlet fever at least, the quarantine period should not be more than 21 days and a minimum quarantine of even less.

DISCUSSION

DR. WM. DE KLEINE, Flint: The Health Department of the City of Flint has quarantined 21 days for scarlet fever for the past two years. Prior to that time we quarantined 28 days. In 1917 there were 638 cases of scarlet fever reported. From January 1918 to May 1919 there were 212 cases reported. The 21-day quarantine was begun in May 1919. From May 1919 to May 1920 there were 282 cases reported and from May 1920 to May 1921 there were 467 cases reported, a total of 749 in the last two years, as compared with about 850 for the two previous years.

Of the 756 cases reported in the 1919 and 1921 period 137 cases or 18% were reported as secondary cases in the home. Of the 137 secondary cases 93 or 68% developed the disease within 10 days after the onset of the illness of the first cases in the home; 30 cases or 22% developed the disease within 15 days, and in more than 10 days; 10 cases or 8% within 21 days and in more than 15 days; and 4 cases or 2% after 21 days, and of these, 2 cases or 1% developed the disease after 28 days.

Of the 30 cases which developed the disease within 15 days, about two-thirds occurred in families where there were two or more secondary cases. It was impossible to tell whether they acquired the disease from the first case or from the secondary cases. It is fair to assume that a certain number of these were exposed to the secondary cases and therefore developed the disease within 10 days after exposure. If we add one-half of these 30 cases to those who developed the disease within 10 days then about 80% of the total number of cases acquired the disease within 10 days, 90% acquired the disease within 15 days, 98% within 21 days, and 2% after 21 days. It would seem that this evidence would indicate that the 21-day quarantine period is long enough. In many cases I believe it could be cut down even more without harm to the community.

During the last year we have not forced the wage earner to leave the home and board elsewhere. If affairs could be so arranged that it was not necessary for the wageearner to come in contact with the patient, we have allowed him to room and board at home. The importance of keeping away from the patient was carefully explained. This has brought about much better co-operation because it means less hardship both financially and otherwise. The more lenient we can treat the family in all cases the better co-operation we receive.

DR. J. D. DEACON, (State Health Department): I am very sorry of one thing, and that is that both Dr. Braley's paper and Dr. De Kleine's discussion invites violation of the law. I would not like anybody here to get the impression that it is optional with the health officer as to the length of quarantine for scarlet fever, as the law, at the present time exists. It requires absolutely a 28-day quarantine, and an absolute quarantine. However, I wish to say for myself that I fully agree with Dr. De Kleine's statement that it is no use of quarantining the wage-earner. I don't believe scarlet fever is carried about by a third person. I don't believe I have ever heard of such a case, I don't remember of hearing any really authentic cases where scarlet fever was communicated by a third person. But as long as the law is as it is it should be obeyed. On the other hand, as to the time of quarantine, I might say here that two of the states have recently returned to the 35-day quarantine. It is an open question yet as to just what is the proper period of quarantine. I would invite your attention

to one thing, and that is in the city where we have health departments, it is a very different thing from the rural health officer, who, as I sometimes say, is frequently the village drayman, and is not able to differentiate between the severe and mild cases. It seems to me that it is going to be necessary at least for some years to retain some definite minimum period. Otherwise patients will be running around inside of two or three days, which I don't think is reasonable nor proper.

DR. WILLIAM M. BRALEY, (Highland Park): In regard to recurrent cases coming within 24 hours: I think perhaps it is possible, but not probable; in our experience two days has been the minimum in which recurrent cases come.

With regard to the law of 28 days: I feel at the present time as though it is up to someone to take the initiative if we expect to have this changed, and that was one reason why I had taken it up in my paper. I think at this time it might be well for this association to take some action, and ask the state board of health to change this to 21 days.

DR. WM. DE KLEINE, (Flint): Mr. Chairman, may I say a word, just a minute. I don't want Dr. Deacon to think we are deliberately violating the law. It is not our purpose to do that at all. We want to co-operate with the State Board of Health always, and I think we always have done. I feel a good deal like Dr. Braley does. I think we are on the wrong track. I am interested in preventing scarlet fever, keeping it down, and I think we can keep it down just as well with a 21-day quarantine period, as we can with a 28 or a 35. I am an advocate of cutting it down to 15 days where it is possible. I am a strong advocate for that, I believe it is the only way to get better co-operation and a better feeling towards the health department from the people at large, especially the wage-earner. It is the only way to get it—it is the only way in which I can do better work in the city of Flint, and I want to do it as best I can. The State Board of Health is not actively engaged in quarantining people. They are making our rules and regulations, and we are doing the work. It is up to us to bring our experience to the State Board of Health, and then try to induce them to make their rules and regulations accordingly.

I am hardly in favor of recommending, in any arbitrary way, but in an advisory way, that they change their rules, and make them so that we can do our work in the way in which we think best. If you want to make rules for the village health officer, all well and good, but for those of us who are organized for the purpose of carrying on health work efficiently, don't make us law violators, but help us to do our work as we see it best.

I would like to get an expression here at this meeting, from the health officers particularly, as to how they feel about this thing, whether or not they feel they would like to handle it in their own cities?

CHAIRMAN MEADER: Would you want to make that as a motion?

DR. DE KLEINE: Yes. I am willing to make that as a motion, that we recommend to the State Board of Health that they take this matter under consideration, to revise their rules and regulations, as to the number of days—simply take this matter under advisement.

DR. DEACON: Is there going to be another meeting of the general session? I think it would be wise to bring that matter up in general session, but I would like to second that motion.

CHAIRMAN MEADER: Would it be well to bring it to the Executive Board's attention?

DR. DE KLEINE: I make that motion that we refer it to the Executive Committee, and ask them for action on this thing.

(The motion was seconded, and on being put to a vote, was carried.)

PSORIASIS, SOME POINTS CONCERNING ITS ETIOLOGY AND TREATMENT.*

GEORGE VAN RHEE, A. B., M. D.
DETROIT, MICH.

The direct cause of psoriasis is no more apparent today than it was a century ago. The opinions of various men and various schools are widely diverse. In general, it may be said that among the many theories advanced as to the nature and pathogenicity of this disease, two stand out pre-eminent: First, that it is bacterial in origin, second, that it is due to a toxemia, the result of some disturbance of metabolism.

Schamberg (1.) and his associates, in 1914, carried on a very exhaustive research on the bacteriology and biochemistry of this disease. They found a rather large number of positive Wasserman reactions using alcoholic extract of luetic liver and cholestrinized alcoholic extract of human and beef heart as antigens, in cases with no history of syphilitic infection. On the other hand, antigens made from scales and cultures failed to give a complement fixation reaction. Aerobic, anaerobic, and blood cultures failed to reveal any organism bearing any etiological relationship to the disease, except a diplococcus which was found in five cases and in one blood culture. Vaccine treatment and inoculation of extracts into monkeys gave negative results.

In their researches on metabolism they found that a psoriatic subject on a given diet eliminated less nitrogen than a normal individual or a corresponding diet. They further found that the retention of nitrogen was directly proportional to the extent and severity of the eruption. They concluded that a high protien diet exhibits an unfavorable influence on psoriasis by stimulating the proliferative activity of cells by furnishing an abundant supply of protien. To prove this point, they treated several patients on a low protien diet with favorable results, while in others they found no change.

Jamieson (2.) conducted researches along similar lines on blood chemistry in psoriatic subjects found that the increase and decrease of leasions did not correspond to the increase and decrease of non-coaguable nitrogen and uric acid.

Cook and VanAlstyne (3.) reported favorable results from the injection of nitrogen extract of alfalfa and millet seed by

*Read at 56th Annual Meeting, Bay City, May, 1921.

Beebe's method. They attempted to educate cells to assimilate nitrogen. Jamieson reports negative results following the use of this method.

Dark field illumination made by Ketron (4) were negative.

According to Winfield (5) psoriasis may be associated with tonsillar disease. No specific organism was found but the inflammation and high temperature may have produced a metabolic change sufficient to cause psoriasis. The writer has seen similar cases in tonsillitis and bronchitis. On the contrary, we have observed a disappearance of the eruption following acute infections. Cook reports several cases of pyorrhea alveolaris associated with psoriasis in which the eruption cleared after the cure of pyorrhea.

Engman and McGarry (6.) employed nonspecific protien therapy with some favorable results probably due to changes in metabolism produced by leucocytosis and hyperpyrexia.

Some French observers believe that the flora of the intestinal canal may play an important role in the causation of psoriasis. They used vaccines made from these bacteria but report no cures. Others used intravenous injections of horse serum without favorable results.

Bory (7) in 1919, after making numerous experiments cultures of scales and blood and complement fixation tests with serum of psoriatic patients concluded that insects may be the carriers of the still unknown germ of psoriasis. Further, that bacterologic examination has constantly shown a small irregular rod-like organism resembling mycelia and very much the appearance of microsporum minutissum.

Sweitzer and Michelson (8.) in studying acidosis in skin diseases found no marked change in the alkali reserve in psoriasis. They selected only well marked and widely distributed cases. Complete blood chemistry was done on four cases and no increase in urea nitrogen was found.

From these various observations we can conclude that up to the present time we have no convincing proof that the disease is bacterial in origin. The sudden appearance and disappearance of the eruption during change of season, change of diet, and following toxic and inflammatory conditions together with the work of Schamberg and Jamieson would lead us to believe that a toxemia, due to a disturbance of metabolism may be one of the most important factors in the production of psoriasis.

Internal and external remedies are employed in the treatment of psoriasis and a judicious combination of both usually gives the best results. In the systemic treatment each individual case should receive careful study, all possible etiologic factors should be kept in mind. Every case should have a complete and thorough examination by a competent internist for foci of infection.

Careful attention should be paid to the hygiene. Open air pleasures and sufficient exercise, systematically taken will have material effect in aiding the medicinal treatment. Sunlight is very beneficial in many cases. Change of climate during the winter months is often advantageous. Cases of long standing and those with a generalized eruption should be hospitalized because not only rest, but systematic treatment under supervision tends to shorten the course of the disease several weeks.

Diet has no marked effect on the disease, some cases improve temporarily on a low protein diet, while in others the eruption is exaggerated. We have placed individuals on a rice diet for several days with no change, but upon a return to an ordinary diet the eruption began to wane.

Fox (9) Trimble and Rothwell (10) used injections of auto serum. They found no benefit from the serum alone but the action of Chrysarobin seemed increased.

Nonspecific protein therapy stock vaccines and vaccines made from the intestinal flora are reported as producing favorable results in some cases. Intravenous injections of horse serum have been used.

Among the drugs used arsenic stands out foremost. It should not be used indiscriminately. In acute non-inflammatory and in old long standing cases, or in recurrent attacks which have never received systematic treatment a very favorable effect is seen. It should not be used in an acutely inflammatory condition, especially where the disease has rapidly spreading as inflammatory symptons are increased and fresh outcroppings stimulated. Arsenic may be prescribed as Fowlers solution, sodium arsenite, arsenious acid. Sodium cacodylate hyperdermically is often of value. Salvarson in any form has not proved beneficial. Alkalis, potassium iodide, the salicylates, and phenol deserve honorable mention.

Except in cases where the inflammatory symptons are slight, the patches few in number, and small in size, local treatment is indicated. For the removal of scales alkaline baths, keratolytic agents and bland oils may be used. Turkish steam cabinet

or hot air baths are effacacious. In many instances, this form of treatment together with internal medication is sufficient, but in most cases more vigorous therapy is necessary.

One of the most efficient of all local remedies is chrysarobin. According to Schamberg (11) the superiority of this drug over others is probably due to three factors: First, its resistance to oxidation on exposure to air. Second, its strong reducing reaction. Third, its chemical affinity for and firm union with the protiens of the skin.

"For this reason it is possible that the firm chemical union and abstraction of oxygen results in a restraining influence upon the proliferative power of epithelial cells. He also believes that there are three stages of the disease, the developmental, the quiescent and the stage of spontaneous decline. Now if the disease is attacked with chrysarobin during the developmental stage harm is done but during the quiescent stage the drug has a marvelous effect on the eruption."

Mook (12) gives a formula used in the British army during the war in which phenol was added to the chrysarobin. He also states that the British used the drug during all stages with good results. We have had no experience with this formula but believe there might be danger of phenol poisoning.

During the last two years Jamieson and the writer have had difficulty in obtaining a therapeutic reaction from the use of chrysarobin. We have used it in high and low prcentages. So far we have not been able to ascertain the cause unless the quality of the drug used is below standard or chrysophanic acid which is the oxidized product of chrysarobin and is therapeutically inert was substituted.

The use of chrysarobin has its disadvantages which restricts its employment: First the tendency to produce a severe dermatitis; second, staining of the skin, hair, nails and clothing.

Tar in its various forms has proved valuable. When used in cases with an extensive eruption toxic symptoms may appear which subside upon withdrawal of the drug. Ammoniated mercury is used in lesions of the face and scalp and also in acute eruptions. When used in extensive areas mercurialism may result. Bechet (13) reports a case of mercurial ptyalism using an ointment of two and five-tenths per cent.

X-Ray is a very effective remedial agent. The exposures should be short and frequently repeated. It should not be used on the scalp as a permanent alopecia may occur. Electric arc lights and alpine sun are very beneficial. Thus far all remedies and methods employed in the treatment of psoriasis do not insure against relapses.

CONCLUSIONS.

1. At the present time we have no proof that psoriasis is a disease of bacterial origin.

2. Psoriasis is probably due to a toxaemia resulting from a disturbance of metabolism.

3. Treatment is constitutional as well as local.

I wish to express my gratitude to Dr. R. C. Jamieson, for many helpful suggestions.

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DISCUSSION

DR. CONRAD GEORG, Sr., Ann Arbor: Many years ago I had my first case. I removed the scales with cod liver oil to get down to the scalp. The man told me that he had it a long time. He came to me because I was the youngest beginner in the city and, of course, knew the most. The case recovered. It recovered in the course of a few weeks. I had this man under observation for years, and it remained well. I paid no attention to diet or to metabolism, as we did in those days.

Since that time I have met several cases. I applied the same treatment. Cod liver oil for removing the scales down to the cutis vera or epidermis, and Fowler's solution until the case was cured. Then, of course, I, as a general practitioner, had no further interest in the case.

DR. GEORGE VAN RHEE, Detroit, closing): I haven't anything to add. In my few years of observation I have seen no cases cured, absolutely cured. I am not saying they cannot be cured, but the majority of cases recur.

SURGERY OF THE PANCREAS*

B. M. DAVEY, M. D.
LANSING, MICH.

The Pancreas is a solid glandular retroperitoneal organ of important physiological functions, located transversely across the upper posterior abdomen.

It lies over the first and second lumbar vertebrae, aorta, vena cava, splenic, superior mesenteric, and sometimes the left renal vessels; and is covered anteriorly by the

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posterior parietal peritoneum and frequently by one or more of these structures—gastro-hepatic omentum, stomach, gastro-colic omentum, transverse colon.

This gland is arbitrarily divided transversely into head, neck, body and tail. It weighs about three ounces, and is six or more inches long, two inches wide, and one-half to three-fourths of an inch in thickness, and is shaped like a hatchet. It is light pink in color, except when greatly engorged with blood, then red.

The first part of the duodenum forms a bed for the head or hatchet part of the gland.

EMBRYOLOGY

A brief review of the embryology and histology of the Pancreas may not be amiss. It develops from two separate anlagen. The first, or dorsal, appearing at the fourth foetal week, is an outgrowth from the duodenum. Slightly later the second anlage develops as two outgrowths, one from each side of the early bile-duct. One of these, the left, atrophies, leaving the right to develop and its intimate association with the bile-duct is retained throughout life. From the dorsal anlage, growing more rapidly, the body and tail of the Pancreas is derived, opening into the duodenum by the duct of Santorini. The ventral portion, in consequence of change of position in the gut, suffers displacement to the left and behind growing towards the dorsal gland with which it soon fuses. Thus is formed the head of the Pancreas; its outlet being known as the duct of Wirsung. Usually the duct of Santorini loses its connection with the duodenum, and becomes entirely tributary to the duct of Wirsung.

In its general structure the Pancreas agrees with some of the other glands of the body; for instance the parotid. However, there are some important differences—tubular instead of saccular alveoli, the marked differentiation of a granular zone in the protoplasm of its secreting cells, the absence of specialized intra-lobular ducts, and the presence of the Islands of Langerhans.

The chief pancreatic duct gives off numerous inter-lobular branches, which are lined with a single layer of columnar epithelium. The relatively long intermediate ducts pass directly into the tubular alveoli, within which their attenuated epithelium protrudes as the "centro-acinal cells." The relation of the latter to the usual glandular elements lining the alveolus is peculiar, the thinned-out and spindle duct cells being surrounded externally by the secreting cells. The tubular alveoli of the gland, often tortuous and divided, possess a membrane propria against which lie the secreting cells.

During functional activity the cytoplasm exhibits two well differentiated zones, the inner one, which is highly grandular, and the outer one, almost homogenous. The relative width of these two zones varies with the functional activity of the cells. During fasting, the granular zone is broad, and the outer clear one narrow. With the discharge of pancreatic secretion during digestion, the granular zone diminishes and reaches its minimum, almost disappearing when the gland is exhausted. Rest is accompanied with a return of the zymogen particles in the granular layer.

The "Islands of Langerhans" appear as a small collection of cells, some three-tenths of a millimeter in diameter, lying between tubular acini, from which they are separated by an envelope of connective tissue. These cells, although developed from the same tissue as the ordinary glandular elements of the Pancreas, are considerably smaller, polygonal in shape, and have no characteristic zone structure. These islands of cells are abundantly supplied with large capillaries, but no excretory system of tubules has ever been demonstrated.

Aberrant pancreatic tissues with duct connection have been found in the walls of the stomach and small intestines.

The organ is rich in vascularity, both blood and lympathic. Its head receives many small arterial branches from the gastro-duodenal and hepatic, likewise similar branches from the superior mesenteric to the posterior part of the head, neck, and a small branch to the lower border of the body. Branches from the splenic artery supply the upper side of the body and tail. The lympathics are closely related with those of the duodenum, bile passage, and surrounding structures.

This organ secretes daily about 1,500 cubic centimeters of fluid containing the body's chief digestive ferments—trypsin, lipase, diastase, maltase, nuclease, and a small amount of rennet-like ferments. It also furnishes one or more important internal secretions, which have to do with carbohydrate metabolism, and possibly a hormone, which aids intestinal absorption.

Recognizing the many important blood vessels of and in the proximity of the gland and the physiological importance of these ferments, one cannot but have great respect for their producer, and use the keenest judgment in mapping out any line of treatment in injury or pathology thereof. Thus

let us approach a discussion of the conditions which may be helped by surgery with all due respect to his majesty, the Pancreas, the only organ with ferments capable of digesting all classes of foods.

SURGERY

It is not in the scope of this paper to say much of the common surgical lesions of the Pancreas, which are correctable by surgery on the adjacent viscera; but to deal with the surgery of the organ itself. Thus an acute and chronic pancreatitis in their various stages may be, and are, treated successfully by removing stones from the bile passage and long continued drainage thereof; excision of duodenal and gastric ulcers with gastro-enterostomy, appendectomy, etc. While further experience may teach us that in the absence of any of the above conditions and in the presence of acute pancreatitis, it may be wise to establish drainage and even make superficial incisions and punctures of the Pancreas. This has been done by Korte with a fair degree of success, and even recommended by Deaver (1) in his recent contribution to Ochsner's Surgery.

The conditions which are amenable to surgery of the gland.

Injuries:

Wounds from knife or penetrating implements, gun-shot, crushing contusions or lacerations, and those following rough surgery in freeing gastric and duodenal perforations, into this organ.

These injuries are surgical and the timely institution thereof offers the only hope for rewarded results. In these cases, other than the last mentioned, there are no symptoms by which one can be guided that the Pancreas is involved. One has to be guided by the history, the condition of the patient, and by careful, rapid exploration. Noguchi and Wohlgemuth (2) report the findings of an increase in diastase early in injuries of this organ. The institution of at least drainage is imperative in these injuries. One may be able to take superficial catgut sutures in the gland in case of a clean cut or laceration, coupled with efficient drainage. Needless to say, that these injuries are nearly always accompanied with those of other viscera, and that these should receive first attention.

Truthful surgical statistics of the recent war should furnish us invaluable information on gun-shot injuries of the Pancreas. Holzwarth reports a case of gun-shot wound penetrating the gland with recovery and later followed by the development of cysts at the anterior and posterior openings.

Crushing accidents, as being jammed between cars, run over by a heavy load, or any severe blow, may cause contustion and lacerations of the Pancreas.

Case 1. Mr. C. J., 49 years of age, a Hungarian. On May 19, 1916, he was injured in a local lumber plant, being hit by a piece of stanchion, which became caught accidentally by the saw he was working and hurled with great force against his upper abdomen.

Examination, immediately after accident, showed no break in the skin, but pressure to stomach region gave excruciating pain, also signs of shock were present. The evidence was sufficient to warrant an exploratory operation, but same was refused.

During the first 24 hours the patient's condition grew worse—rising temperature, rapid and running pulse, terrific pain which huge doses of morphine did not control.

After the first day unmistakable signs of peritonitis were manifest. Forty-eight hours after injury, patient finally consented to operation on account of his intense suffering.

The operation revealed sero-purulent fluid through the entire peritoneal cavity, a perforation of the stomach, which was closed. There was a large bulging necrotic mass behind the stomach. The lesser peritoneal cavity was suffused with a bloody fluid. Patches of fatty plaques were present. A large drain was placed into the lesser peritoneal cavity; others through stab wounds in the abdomen.

Patient grew progressively worse and died two days later.

CYSTS.

These are the common lesions for which surgery has played an important role with relative frequency and varied degree of success for nearly half a century.

Cysts are classified as true, pseudo, and echinoccoocus, the last being extremely infrequent. A true cyst is one having its origin from the gland substance and at some time has its own epithelial lining. A false cyst is an accumulation of fluid within or about the organ, having a capsule of connective tissue produced by inflammatory reaction.

Among the true varieties a few instances of cysts in the fetal gland have been reported. Obstruction or retention cysts, induced by some form of chronic pancreatitis causing stricture or plugging of the main or tubular ducts by calculi; these cysts are usually small and numerous, but may grow to an enormous size.

Cystadenomas, similar to those of the ovary, occur in this gland, but unlike the ovarian form with the small pedicle attachment, have a broad base attachment frequently involving most of the gland. Such attachment is separated from the pancreatic substance by its capsule. In this variety as in the ovarian, malignant change may occur and then the gland substances become involved. Cystadenomas do not contain

the gland ferments in their fluid.

Pseudo-cysts—In this class may be mentioned the hemorrhagic cysts resulting from bleeding into the gland substance with partial absorption and the residium converted into a cyst cavity.

Also the cyst of self-digestion. This class may be inaugurated by ferment activation following injury or bacterial invasion. When this form is violently severe the Pancreas digest itself and the surrounding structures, and the patient soon succumbs. While in other cases the process becomes limited, the acini and ducts become sealed by scar tissue, and the destroyed tissues and fluid remain in the lesser peritoneal sac, encased in an inflammatory capsule formed from the surrounding tissues. This kind of a cyst is claimed to be among the most common.

Cysts vary in size, the majority being small and containing from a half to three liters; however those containing as many as 15 or more liters have been reported.

These cysts present themselves according to the part of the Pancreas involved, and also, the relative position of the other viscera in the following locations—pushing the gastro-hepatic omentum upward, if the stomach is low and the superior border of the neck and body are involved; under the gastro-colic omentum, when the other viscera are anatomically placed and the anterior, inferior portion of the neck, body, and tail involved. The usual location of presentment is the left epigastric. Occasionally in the pseudo variety and developing from or near the tail, such cysts may gravitate to the left loin and appear in the kidney region, while it is also said such involvement of the head may gravitate in like manner and appear in the right loin.

In about one-half of the pancreatic cysts it has not been possible to trace their origin, while one-fourth are ascribed to trauma, and the other one-fourth to the inflammatory processes.

There are no symptoms typical of this or any other form of pancreatic disease. Pain of an indescribable character is mentioned by all writers, as having some characteristics of gall bladder, stomach, and intestinal disease, but does not prove up with any other lesion. Some loss of weight without cachexia has been a common finding.

These tumors do not move with respiration. Glycosuria has been found with varying degrees of frequency by various writers; Korte observing this condition in about one-fourth of his traumatic cysts.

If the gland substance is much destroyed, evidence of its functional disturbance may be present, such as glycosuria, and the stools be greasy and contain undigested fats, proteins, and carbohydrates.

Surgically these cysts are best attacked at the most prominent or bulging area. Should the tail be involved and the bulging in the left loin, one can approach in the easiest and safest of all routes, through the loin, carefully keeping outside and freeing the peritoneum to the cyst.

If the cyst is large, its wall is sutured to the muscle and fascia. A trocar is inserted into cyst and its contents allowed to drain off; after which the opening is made sufficiently large to admit a finger and the cavity is investigated for stones and other debris, which if found are removed with forceps. A rubber tube is placed at the bottom of cyst and purse-stringe at exit. The wound is closed and smeared with sterile vaseline.

Should a section of the head be affected and the presentment in the right loin, similar steps would be taken, adding the immobilization of the duodenum. Drainage from either side is short, and if sinus persists for a long time, it is of less consequence and easier taken care of.

The great majority of cysts present in the left epigastric region and must be approached through the trans-peritoneal section. The mass presents most frequently between the stomach and colon; and access is obtained by incising the gastro-colic omentum and the posterior parietal peritoneum to the cyst, perferably over its most bulging area. The cyst's wall is carefully sutured to the anterior parietal peritoneum and subsequently opened, explored, and treated as before mentioned. If the bulging part is near a blood vessel, one might safer open the cyst at a less prominent section.

In approaching these tumors, if through the meso-colon, extreme care should be used not to injure the middle colic artery, for in such an happening, it is absolutely imperative to do a resection of the part of the colon supplied thereby. Deaver lays particular stress on this accident.

If the cyst appears above the stomach it receives like treatment.

It is of paramount importance to wall off the wound and surrounding viscera with gauze packs in handling these cysts, for the danger resulting from the leak of its secretion is great.

Case II. Mr. H. G., 37 years of age, married, laborer, Belgian. Past history negative; always well

except for present trouble. The onset of present illness is rather indefinite; about four years ago he had vague pains in his epigastrium at irregular intervals; these grew in intensity, and were attributed to "indigestion."

Last six months he began to suffer to such an extent that he had to give up his work. He restricted himself to soft diet, which alleviated his distress and pain somewhat. Patient lost 30 pounds in weight within six months. This alarmed him and induced him to seek medical aid.

Patient was first seen March 19, 1921.

Physical examination showed a fairly well-nourished male of medium stature; temperature, 98.6°; pulse 70; respiration 19; head negative except for poor teeth; neck and chest normal. Abdomen bulged below costal margin to left of xyphoid process. Mass in region of cardiac part of stomach resembled a gaseous distended tumor, not painful to manipulation. Slight tenderness about two inches above the umbilicus was noted; otherwise negative. All laboratory examinations were negative.

The fluroscopic examination showed an anchored mass beneath left diaphragmatic arch, having no connection with the stomach. It contained fluid and by pressure could be distended. There was no connection with left pleural cavity. Also some gastroptosis was shown. The barium meal showed the same conditions, besides rapid emptying of stomach and small intestines with some stasis at cecum, but no pronounced pathology in the gastro-intestinal tract.

Patient was operated on March 25, 1921. A high midline incision was made. Stomach, duodenum, and gall-bladder were found normal. A large cystic mass, size of a large orange, adherent to the liver and diaphragm, and attached with a broad base to the body of the Pancreas, was drained The cyst contained a brownish liquid which digested protein and later caused distinct erosion about the wound. Appendectomy was also performed.

By April 17 wound has practically ceased draining. Patient made a normal convalescence.

ABSCESSES.

These may follow some of the forms of pancreatitis, and infectious processes located elsewhere, possibly some of the infectious diseases, and may occur without any ascertainable explanation.

It is ushered in with chills and fever, severe pain, nausea, vomiting, and all the evidences of a critical illness, and demands surgical relief or death will follow.

Case III. February 8, 1919. Mr. D., age 57, bachelor, farmer. Family history of no importance. Scarlet fever and measles in childhood; three attacks of malaria between the ages of 27 and 35; belching gas with sour stomach for short periods from age of 50 to present; constipation requiring cathartics three or four times a week for the past three years; total abstinence from liquor, tobacco, and drugs; never had any venereal disease.

Three weeks previous began having chills and fever with general aches and pains.

Physical examination—temperature 102, pulse 120, blood pressure D 80, S 138; skin wrinkled and loose and of a sallow color; head negative otherwise than the complaint of generalized pain; nose, throat, and teeth in good condition; chest negative. Abdomen was distended, tense, and drum-like sensitive in upper central extending to left hypochondriac region. Found a distinct, immovable, smooth mass, the size of a grapefruit, in the left epigastric region.

The patient was sent to hospital for further study and observation. His blood and urine were normal to all tests at repeated intervals. Glycosuria never occurred at any time either before or subsequent to treatment.

X-ray stomach exposure after opaque meal showed gastroptosis and marked deformity, pars media saculated and pars pylorica constricted to the size of a lead pencil to the right of the vertebral column. After several days hospitalization, his temperature receded and he seemed improved. His lower abdomen became flat, allowing the mass to be noticeable.

The taking of food, even liquids, produced much pain and was soon followed by nausea and vomiting. Since the beginning of this trouble he has lost 20 pounds in weight.

After several consultations he was informed of the serious character of his trouble and of the consequences with or without surgical intervention. On his insistance that something be done for him regardless of outcome, he was scheduled and prepared for operation on March 13, 1919.

A long incision was made through the outer border of the left rectus. Appendix was examined and found nearly obliterated; gall-bladder of a bluish color, small, and easily emptied; hepatic and common ducts free and of normal size; duodenum, pylorus, and stomach normal to inspection and palpation; large, full, firm veins in the gastro-colic ligament. This ligament was separated at the most bulging part of the tumor. The posterior parietal peritoneum was stretched thin and a fluctuating mass, broad as a hand, presented.

It being evident that to incise or try to separate the posterior parietal peritoneum would be hazardous; a circular stitch of chronic No. 1 catgut was made through the anterior and posterior parietal layers encorporating a small bite of the tumor covering a space of an inch. The abcess was drained with trocar and canula of a cupfull of bloody purulent fluid. A large size catheter was slipped through the canula to bottom of cavity, and a purse-string suture of both layers of peritoneum made snug around catheter.

A bed-side bottle attachment received from one to two ounces daily for six days, from seventh to tenth days no drainage; wound looked good; catheter lose and removed; eleventh and twelfth days there is discharge on the dressings. Patient says he feels fine, eats, sleeps and looks good. Thirteenth day he had a severe hemorrhage, saturating dressings and gown; wound packed tight. On the following day a mild hemorrhage; wound edges markedly eroded and evidence of fat necrosis; fifteenth and sixteenth days a little bleeding. On the seventeenth day death intervened from a terrific hemorrhage.

At a hurried "post," fat necrosis was present throughout the lesser peritoneal sac and the abdominal wall; the surrounding structures were suffused in blood; necrotic openings were found in both splenic and superior mesenteric arteries.

CALCULI.

Calculi of the Pancreas are rare. Oser (4) in 1903 reported a collection of 70 cases. Opie found three in 1,500 post-mortems. These stones are seldom recognized and are accidental findings at operations or found at autopsy.

Moynihan (5) reports a pre-operative diag-

nosis confirmed by operation in which he successfully removed a stone from the papilla of Vater by going through the duodenum. Several other surgeons have used the duodenal route in extracting stones from the papilla. The gland has been excised to the ducts of Wirsung and Santorini, and stones removed therefrom by Listanti, Ruth, (6) Stoeblin, and others. In each case the gland was sutured and drained. The literature contains many reports of calculi being found in cysts and abscesses.

Other tumors of this organ are infrequent. Fibromas and adenomas have been found and instances of successful removal have been made by Biondi, Korte, and Mayo Robsen.

Cancer as compared with other lesions is frequent. Some statistics give pancreatic involvement in from one-half to one per cent of all cancers. Needless to say that the treatment of cancer of the Pancreas is not surgery.

In conclusion, if the abdomen is open and all viscera are found normal, before removing the appendix, examine the Pancreas.

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DISCUSSION

DR. L. M. BOGART, Flint: I have only come across two cases of pancreatic lesions and both were acute pancreatitis cases. One was when I was an interne in a Chicago hospital. A man was brought into my service on Christmas night with what I thought was acute peritonitis. The staff man was called and operated. The peritoneum was normal. The bowel was normal and the appendix was normal. The only thing he found was an enormously enlarged Pancreas. The history of the case was only of 24 hours' duration. He drained the case and the man got well. He was on my service for about two months. The other case was in my own work. About a year ago I was called to see a man with a temperature of 104, a leucocyte count of 22,000 with about 90 per cent polymorphonuclears, and great distention. I thought I could feel a large tumor. I opened the abdomen and the bowel was normal. Everything within the abdomen was apparently normal except the large Pancreas. I did the same thing that my previous chief had done, but the man died. The thing I want to bring out is that we overlook cases of acute pancreatitis. It is very rare but at the same time it does occur.

As far as the occurrence of pancreatitis following injury to the Pancreas, I do not know much about that. The first case I saw gave a history of injury 10 days previously, but the man continued about his work. The second case gave no history of injury and only a history of 24 hours' duration.

DR. W. R. CLINTON, Detroit: I looked up something about it the other day and found that some authorities say that the bile backs up into the pancreatic duct which causes distention of the Pancreas. I remember one hemorrhagic cyst that was drained in which we had the same experience as Dr. Davey. The patient had a hemorrhage on the fourteenth day, another on the sixteenth and then passed away. I had another pancreatic cyst which I drained twice. It contained sero-pus and that man made a recovery. Sometimes in chronic cysts the X-ray shadow in pneumoperitoneum may help to differentiate the condition. In many cases the finding of pancreatinin in the urine may aid in the diagnosis.

DR. J. E. DAVIS, Detroit: This subject illustrates very well the type of case of which no one has a sufficient number of experiences to advance the surgery as fast and as far as it should be advanced. Consequently here is a field where experimental work ought to be done in a considerable amount before we can really get very far in our surgical results. The problem, however, I think might be stated in this way, that the pathology is largely that of a secondary irritation rather than primary. It must be so because in post-mortem we really find very few definite instances of primary pathology. We do find a few cases in which we can definitely demonstrate an irritational pathology and some unimportant changes in the Pancreas. The most important changes perhaps that we see the essayist has spoken of and these are taken care of very well. We have some small hemorrhagic conditions that are taken care of, but where we have these conditions in the face of a definite infection, then the condition becomes important.

In regard to the irritational pathology one has to always bear in mind that the duodenum when involved in any pathologic change makes a very serious physiologic condition for us to care for. With this condition I think we can frequently not demonstrate pathology in the head of the Pancreas. Especially so is it when there is no broad attachment of the Pancreas. I have had occasion to observe the differences there are in the extent of the attachments of the Pancreas to the duodenum. That is quite noticeable in the different animals. For instance, in the dog there is a very long attachment of the Pancreas to the duodenum. Also in splenic pathology we may frequently have some changes in the Pancreas. Also, I am satisfied that we have occasionally changes in the Pancreas due to infection in the colon. The essayist has spoken of that condition. I think one might approach the entire subject by considering it under a number of heads. We have had a good deal of attention to the formation. I think that is well, because it is a question whether the ducts of Santorini and Wirsung are both patent or whether the duct of Wirsung remains patent just for a time and then after a certain pathologic change does not functionate any longer. In some of those cases the duct of Santorini may become over-functionated. Sometimes the duct of Santorini is patent and Wirsung is not. I think the most important of all is the irritational condition. I think it is best always to attack a problem like this, going through the fundamentals just as the essayist has done and then if we have to advance in surgery it must be done largely through experimental work.

DR. W. F. METCALF, Detroit: The remarks of Dr. Davey bring up some recollections in this field of work. As I did not have the program, I did not have an opportunity to look up any cases. I can recall operating on only one case of cyst of the pancreas. It was an infected cyst and the patient lived. It was a long-standing infection.

Every case of cancer of the Pancreas has been fatal. Dr. Davey's remarks as to the relation of the conditions opens up the whole field of the question of diagnosis. The secretions are disturbed. I am speaking of cases in which there are no tumors, but in which the secretions are disturbed. I have a man now I am studying. He has been to every clinic. I have not yet made a diagnosis. He has had abdominal sections without avail. In such cases I make an attempt to examine every part of the body, because I feel that the nerve centers are

disturbed and secretions are disturbed accordingly, producing a condition similar to organic change.

DR. B. M. DAVEY, Lansing, (closing): Dr. Davis brought up one point that I must not have mentioned that is correct. In about half of these cases the duct of Santorini continues to function and that is proved by the statistics of Oppi, who has done some 6,000 post-mortems. Sometimes, too, the duct of Wirsung does not function and sometimes they both functionate, but in the great majority of the cases the duct of Santorini becomes a tributary to the duct of Wirsung.

A PRELIMINARY REPORT ON THE STERILIZATION OF NOSE AND THROAT DIPTHERIA CARRIERS WITH THE ULTRA VIOLET RAYS.

LEO C. DONNELLY, M. D.
DETROIT, MICH.

At the request of Dr. Fred M. Meader, Chief of the Contagious Disease Division, Detroit Board of Health, the author has treated forty or more chronic nose or throat diptheria carriers with ultra violet (also called chemical or actinic) rays from the Kromayer lamp. The results obtained on the first twenty or so patients induced the author to believe that with improved technic nose and throat diptheria carriers could be sterilized. With the perfected technique all nose and throat carriers treated with the Kromayer lamp have been sterilized so far as the author knows.

In submitting this paper, your attention is particularly called to the following: The series of cases herein referred to all came from the Detroit Board of Health. The assistants of the board made subsequent cultures which were examined and reported upon by the Board of Health Laboratory. Quarantines were lifted only after two successive negative cultures were obtained. With the checking up and disposal of each case in this manner, what really has happened is that the Board of Health verifies our own experience, thereby substantiating the statements which we feel in duty bound to make regarding the work of the Kromayer Lamp in this class of work.

The treatment is simple and practically painless.

In treating diptheria carriers, the ultra violet rays are projected on to the tonsils through a hollow metal tube applicator six inches long, one-half inch in diameter, with the end slanted so that it fits over the tonsil. We attempt to play the rays directly on all portions of the tonsils for three to five minutes. One to three applications may be required to entirely cover each tonsil. The tonsils are treated separately. Fully 50 per cent of our later cases were sterilized with one treatment. If the cultures come back positive, the same procedure is repeated, giving a four to six minute dose. The second treatment clears up most of the remaining 50 per cent of cases. Three or four cases have required a third treatment, same dosage as the second treatment. None have required four treatments.

For a number of years, diseased tonsils have been sterilized and materially reduced in size by the use of Ultra Violet Rays, so it was only a small additional step to utilize same for the treatment of diptheria carriers.

The technique in treating nasal carriers is but slightly different. The mucous membrane is contracted by the application of 10 to 15 drops of adrenaline chloride solution. A flattened curved quartz rod nasal applicator is used. Ten minutes' time is taken for each nostril, the applicator being slowly worked back as far as it will go and then slowly withdrawn, endeavoring to evenly distribute the rays. The cases treated with this technique have been sterilized in one treatment. The nasal treatment is based on the fact that ultra violet rays will shrink turbinates, greatly relieve or cure coryza, hay fever and the different sinus infections.

The following experimental laboratory work in connection with the treatment of these cases was done by J. F. Miller, B. S., recent bacteriologist at Providence Hospital, Detroit, now at the University of Paris, France. The work was done between May 18 and June 30, 1921, the Kromayer lamp being turned on at the fourth button. All cultures were thick, heavy, vigorous, growing cultures, the germs being present in infinitely greater numbers than would be found in the human nose or throat.

Mixed cultures of diptheria bacillus, straphylococcus albus and streptococci were prepared from diptheria and septic tonsilitis throats and transferred from culture to culture until the growth was strong and luxuriant.

The following table shows results when the petri dish agar cultures were held close to the Kromayer lamp:

Exposure	Effect end 24 hrs.	Effect end 48 hrs.	Effect end 56 hrs.
30″	none	none	
60″	slight growth	good growth	
90″	none	slight	
2′	none	none	slight

(This exposure showed end 7 days, growth which

would be considered normal in untreated cultures at end of 24 hours.)

2'15" No growth 5 days. Slight growth 6th day.
2'20" After 14 days, no growth.
(Showing complete sterilization in 2 min., 20 sec.)

The Ultra Violet Rays from the Kromayer lamp were projected into Detroit Board of Health Blood Serum Culture tubes containing a luxuriant growth Diptheria Bacilli, with the following results:

Exposure	Effect
1 minute	Unaffected.
3 minutes	56 hrs. No growth
5 minutes	56 hrs. No growth

(That portion of tube more than two inches from light showed growth. The proximal two-inch portion showed no growth.)

The table following gives the results obtained through the Tonsillar applicator, as described above, the Light being projected onto thick, small growths on Petri dishes.

	Effect		
Exposure	24 hrs.	48 hrs.	72 hrs.
1, 2, 3, 4 minutes	none		
5 minutes	slight	good	
6 minutes	none	good	
7 minutes	none	none	slight
8 minutes	none, end of 7 days.		

From June 10 to June 25, between 12 o'clock noon and 2 p. m., when the sunlight was intense, similar cultures on Petri dishes were exposed for one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen minutes, with very little inhibition of growth. Cultures exposed sixteen minutes showed some growth.

An interesting point is that while it takes eight minutes at six inches to sterilize the cultures using the tonsillar applicator, we have killed the diptheria germs in the tonsils through the same applicator in two minutes, the treatment of an individual area usually being three minutes. In the author's opinion, this could be considered as evidence that the ultra violet rays do more than sterilize, that they bring an increased flow of blood to the diseased tonsils and that this increased blood supply greatly aids in overcoming the infection. It has been known for years that ultra violet rays bring about an increased flow of blood and lymph through the treated parts.

Diptheria toxin treated for five minutes with ultra violet rays is rendered harmless.

It would seem logical to use ultra violet ray radiations as an adjunct treatment in diptheria, as it is well known that acute or chronic tonsilitis, and quinzy are all benefited or cured by these rays. Many writers believe ultra violet ray radiation to be the best treatment extant for these cases.

TWO GIRLS IN A BOAT

I have just been reading a pamphlet written by Will Irwin. It deals with some facts and figures regarding venereal diseases. To introduce his story and illustrate what he believes to be the attitude of the American people towards this scourge, he tells a story:

"Two young men, escorting two very nice young girls, went boating on a Western river. Suddenly they heard shouts for help. They looked and saw that a man, swimming, had been caught in the swift current. The young men rowed toward him with all haste. And then one of the girls began to scream.

"Heavens," she cried, "we can't take him aboard. He isn't dressed. He's—he's naked." The other girl joined in the protest. Their escorts ignoring continued to row to the rescue of the drowning man. The girls went hysterical. They clutched at the arms of the rowers, and before the struggle ceased, it was too late. The man was drowned."

All this happened in the West when Will Irwin was a small boy, and he vouches for the truth of the story.

It may be hard for you to believe, but during the four and one-half years that fifteen nations engaged in the World War, they were losing more lives from venereal diseases than from bullets, shells, bombs, gas and all the other ghastly wholesale killers. The record for 1920 is in the same percentage as during the war. It will be the same if not greater, in 1921. Yet these two diseases present no mysterious problem to the modern physician. They may be cured, and they may be checked at their source. Why then, have we not acted, we who claim to be civilized? Simply because we have assumed the attitude of the two silly girls. To put it in Irwin's exact words, "We have been too nice, too rotten, too nasty nice to come out in the open and fight against syphilis and gonorrhea.

The following facts are not conjectures, guesses, or exaggerations of alarmists. They are a brief synopsis of cold facts gathered by calm men, and proved and approved by our government. Of the two diseases, syphilis is the killer. It is the sole cause of locomotor ataxia, and develops into several fatal complications. Statistics indicate that it actually kills 300,000 people in the United States every year. We lose in four years as many people through the ravages of this loathsome and awful disease as France lost in the same length of time in the war with Germany. Tuberculosis, heart disease, cancer, pneumonia—and all other diseases give way to syphilis. Eighty years ago it was a common thing to see people with pock-marked faces who had recovered from smallpox. Science has overcome the ravages of smallpox. We know it is no longer necessarily fatal. We seldom see a person with the tell-tale marks. Syphilis will yield to treatment as well as smallpox. Then why should we not handle it as rigorously. Because, as Irwin says, we are too nasty nice.

Gonorrhea is much more common and far less fatal. It seldom, if ever kills directly. It often leads to fatal diseases, however. In modern war, artillery kills two men and wounds three. Rifle

and machine gun fire kills one and wounds five or six. That's the average. Syphilis is the artillery of our hidden foe; gonorrhea is the small arms, for this less fatal but more prevalent disease leaves an awful path of impaired health and pathetic affliction in it's wake. The sad facts are that thousands of women suffer for the permiscuity of their husbands before marriage. It cannot be dismissed with the shallow phrase that "they brought it on themselves." Eighty per cent of the blind babies of a few years ago were the unfortunate victims of the sins of one or both of their parents.

Nearly all the so-called fatal diseases of fifty years ago have been conquered by science. For that matter, so have syphilis and gonorrhea. But because of the ignorance of many men; because of the secrecy and shame; because of the quacks and dishonest members of the medical fraternity; and mainly because of the "nasty nice" attitude of you and I and all the rest of us, we are making no headway against the diseases. They are as prevalent as ever. The percentage of deaths is as great. Some of the after effects such as blindness at birth, are not as bad, thanks to science.

Of course, there would be an awful roar go up if a medical examination was necessary to procure a marriage license. It would be a sensible measure. It will be in effect some day. Simply because we will have to do it, not because we want to. But there are parents in Mason today who some day will rue the day their daughter was married. Because this community, like every other community, has its cases. And these cases are unknown except to a few. They will continue to mingle with society as has been the custom for years.

Until the laws of this country are what they should be, the education a child receives from its parents and at school is about the only protection to be had from this menace. Education, religious training, recreation and entertainment of the right sort will all help, but it will not prevent the infected skunk from mingling with your young folks. There is serious cause for concern and every parent should not neglect to do their individual duty and influence.

We congratulate and commend this Mason, Michigan editor for this editorial published in his local paper. May there be more editors who will thus openly address their readers on this subject.

THE MODERN METHOD OF FEEDING INFANTS

Modern infant feeding calls for a formula suited to the individual requirements of the individual baby. The physician now realizes that an infant deprived of breast milk must be fed as an individual The nourishement from the infant's food is principally derived from cow's milk. The "foods" contain no mysterious life giving elements but are used as modifiers. As such they are indispensable for their carbohydrate content, the added carbohydrate being necessary to make up for the loss of carbohydrate when cow's milk is diluted with water. It is also important that these "foods" are given as carbohydrates and should not contain a mixture of vegetable protein and fat, since the cow's milk supplies animal protein and fat in proportion suitable for the growth of most babies.

Infant feeding should be directly under the control of the physician. Realizing this important fact, Mead Johnson & Company of Evansville, Indiana, have manufactured a line of Infant Diet Materials suitable for the individual requirements of the individual baby. These products do not carry laity directions on the trade packages. Such directions on a package of food is the unsurmountable wall that differentiates between individual infant feeding and indiscriminate infant feeding. The physician may prescribe Mead's products with perfect confidence.

Mead's line of Infant Diet Materials consist of Mead's Dextri-Maltose (Dextrine and Maltose), Barley Flour, Dry Malt Soup Stock, Casec (Calcium Caseinate—for preparing Protein Milk), Arrowroot Flour and Cerena, all of which are supplied without any directions on the packages. Over and beyond the gratifying results obtained from Mead's products, the physician is given unlimited scope to his own creative talents, hence there will be a greater number of better babies in his immediate neighborhood. The mother who uses Mead's Diet Materials at the direction of her physician is disposed to place credit for the welfare of her baby where credit belongs, i. e., to the doctor. The Mead Johnson policy means the realization of an ethical ideal.

Interesting publications on Infant Feeding, prepared by Mead Johnson Company are well worth writing for. Letters addressed to them will receive personal attention from their Scientific Department.

THE JOURNAL
IS
YOUR FORUM—
WE INVITE YOU
TO UTILIZE
IT FOR THE
EXPRESSION OF
YOUR VIEWS
ON
MEDICAL SUBJECTS

The Journal
OF THE
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ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

W. T. Dodge, Chairman .....Big Rapids
A. L. Seeley .....Mayville
J. M. McClurg .....Bay City

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SEPTEMBER, 1921

Editorials

INTELLIGENT THERAPY

As investigations and research revealed demonstrable proofs of what actually occurred when definite symptoms manifested themselves and physiological functions became deranged, therapeutic nihilism resulted. Empiric exhibition of drugs was proven fallacious. Intelligent therapy ensued. Therapeutics became more scientific and established definite basic principles. Experiments established reliable proof of physiological effect and action. Many there are, who still have and give their favorite many drug prescriptions, or, who empirically exhibit certain drugs in certain conditions. To do so is either a habit to which they cling, or, it is outright ignorance and drug peddling.

We believe in drugs. We believe in therapeutic effect. We believe that morbid processes may be prevented, aborted or overcome by intelligent therapy. We do not believe in set formulas, combinations or empiric exhibition of drugs whose use is known to be ineffectual and often dangerous.

Therapy does not consist solely of the writing of a prescription for a "shot-gun mixture," some elixir, pill or pharmaceutical combination just because it seemed to produce results in a few cases or because some advertising literature represents a preparation to be the indicated and curative remedy in certain forms of disease. That is not and should not be the basis of therapy or prescribing. Intelligent therapy is based on: first, a thorough knowledge of the pharmacological properties of a drug; second, its physiological action in given doses and, third, its exhibition in such dosage and frequency as is known to influence physiological functions—to produce results. This implies the necessity of an ability to recognize pathological and physiological changes that are present in the ailment you are called to treat. It is upon these principles that intelligent therapy rests.

We feel, in fact we are quite certain, that the thought given to intelligent therapy today is far less than it should be. We incline to therapeutic nihilism and still prescribe drugs. Our prescriptions are not formulated because of their therapeutic indication or for their physiological effect. They are written largely as routine habit or because some drug representative has stated that his preparation accomplishes wonderful results. Frequently we prescribe simply because we feel something should be administered. In doing so we fail miserably and it is needless to say that we are not meeting up to the standards of intelligent therapy.

The principles of therapeutics have undergone many changes in the past few years—marvelous changes since the days we sat in the class room and listened to the lectures on the subject. Theories have been disproven and new tenets have been established. That which was once held as physiological effect has now been discarded. We know strychnine is not a cardiac stimulant—why give it for that purpose? Digitalis in small doses, we know is far less effective than the large dose given to full effect and repeated to maintain that effect. Aconite and veratrum are not to be administered routinely in fevers. When indicated they should be given to effect and repeated but a few times. Aconite or veratrum never cured a fever—removal of the cause is the proper course. The salines are useful for a quick catharsis, they are positively harmful when employed routinely and for indefinite

periods. Apomorphine's only value consists in its emetic properties—why give it as an expectorant? Of the host of cough sedatives codiene is the most potent—why use heroin or other alleged sedatives? Calomel is a direct kidney irritant and should not be exhibited when renal disease exists. Excessive purging is always fraught with danger. Proper diets will do more to overcome constipation than all the pills, oils, cascaras and physics on the market. When pain is severe, and we are certain of the etiology, morphine alone gives relief until the cause is removed. Opiates should never be given for hypnotic purposes.

We might continue at length but to do so is not the purpose of this editorial. We recognize that many will disagree with what we have said. Cases will be cited in contention. Incidents will be reported—they are all remanents of the days of empiricism and are not consistent with modern intelligent therapy. Therapy to be intelligent demands equal study and time as does diagnosis and pathology. The days of pill peddling and drug dosing are past. Be an intelligent therapist, not a formula-ite.

THE SIGNIFICANCE OF SPIRITUALISM.

Dr. Clarence O. Cheney in the July issue of Mental Hygiene sums up the significance of spiritualism as follows:

With the feeling that the truth of spiritualistic belief has not been proven and that the belief springs from a need that is not satisfied in this world, the question arises. "What had best be our attitude toward it?" Our answer is that this depends upon the individual. Just as we would not believe in trying to take away from an individual a religious belief that was a comfort to him and made life more tolerable and at the same time made him of more benefit and comfort to others, so we would not believe in trying to take away spiritualistic belief that had the same effects. Any person has a right to believe what makes him a better member of society. On the other hand, how often do we see the bad effects of spiritualistic belief absorbing the individual, cutting him off from interest in or contact with others, making him unproductive and not only of no help to others but a burden to them. Here the situation is different and certainly it is incumbent upon us to attempt to direct such unhealthy activities, into more productive channels. The possibility of redirection in such persons obviously depends upon the strength of the wish to believe, the depth of fixation of the belief, the ability to obtain new outlets, and possibly the personality of the redirector.

Many of us are not deeply concerned from day to day with the question of our own survival after death or with the question of whether or not the dead can or do communicate with us. We are more concerned with the life of reality about us, in our contact with other persons, with our aim to help to make life happier and more complete for those with whom we come in contact, and in so doing we are deriving a satisfaction and happiness ourselves that leaves little if any feeling of need for a more attractive world beyond. There is so much around us to be done that we seldom raise our eyes from this earth and gaze longingly toward that infinite heaven which to the spiritualists and to many others is the only place where there is an opportunity to live out one's destiny in completeness. Although all is not joy and happiness here, we are trying and striving to make this earth a better place to live in and thereby fill our lives still more completely. If only the individuals with eyes and ears so intent upon another world could bring their eyes back to earth and live in reality, they would very likely find that the world here and now in which they seem to find only misery and unhappiness, is not such a bad place after all.

THE ETHICS OF RESPECT

There are two kinds of respect. The respect that you give and the respect you receive.

Respect for a professional man is the same as a soldier's respect for the uniform of his officer. He salutes the authority of the officer, not his person. The public respects, or should respect, the profession through the man who is engaged in that profession.

"Hello, Doc, you old pill roller, how are you?"

This salutation in a public elevator in the presence of two or three ladies, one or more of whom may be the doctor's patients, is not what can be called either profitable or ethical respect for the doctor or his profession. Yet, how often do we not tolerate this bombastic rowdery and bear with it in the name of good fellowship.

The doctor who is thus addressed is himself to blame. Somehow he has himself lost the connection of professional respect. He has not educated his friend or friends to

recognize that fine line of demarkation which distinguishes Dr. Doe in public and Dr. Doe in a poker game.

Lately there has been a marked drifting away from the respect to which a physician is entitled from the public. In the operating room and between ourselves we are as quick to resent an ethical faus paux as an officer is quick to censure a private who is a bit tardy with his right hand. But we condone it among our "customers." "Pill roller" is mild compared with what we sometimes are called by those whose names are often listed among the "outstanding accounts."

A physician who often chafed under the public familiarity of one of his patients, happened, during his absence to deliver his wife of twins. The father-to-be had asked him to wire him in the event the accouchment took place before his return. Thinking, by a formal statement, without congratulations or well wishes to impress his friend and patient with the seriousness of the event, he wired:

"After a night of intermittent labor, your wife gave birth to twins. All are doing well."

The operators seemed to have grasped the first part of the message but the strain evidently broke them down at the last sentence, which was read by the recipient:

"All have gone to hell."

"What do you mean by jesting in such a serious matter," said the irate parent to the doctor when he arrived upon the scene.

The physician dumbfounded, read the message. Quickwitted himself, he replied:

"I mean no more offense than you do when you twit me about my pills."

These heroic measures may not be necessary to create respect, but it depends largely upon the man himself if he is respected. Being a physician is a serious matter. Life is a serious business. If you can't play poker or golf with your associates and remain a physician, either quit the profession or quit playing. A popular, good-fellow doctor is seldom either a professional or a financial success. When it comes to the good-fellow's life or that of his wife and children, he is quite likely to leave his sporting friend holding the anesthesia bottle. The real work is done by the serious thinking and less jovial man whose reputation for somber and sober work is established.

This doesn't mean that a physician is obliged to live his life in sack-cloth and ashes, or that he must assume a moribund, woebegone attitude, either to his work or his patients. Cheerfulness is now an established requisite of the profession. But to succeed, no doctor can permit himself to be hailed as "good old Doc," on the street corner, even though he may be a good loser at poker, or able to play a fairly good game of golf.

DEFECTIVE INDIVIDUALS

The Committee of the American Engineering Society finds that the annual industrial or economic loss in the United States from preventable disease and death exceeds $3,000,000,000. This is the figure that is creating the demand for some form of state medicine or some other measure that will diminish that loss. The same committee is authority for the statement that 42,000,000 persons lost 350,000,000 days from illness and disease and non-industrial accidents last year. The committee further announces that it did not attempt to solve the problem or that it is satisfied with the present agitation for state medicine. The loss can be controlled and largely removed by properly organized and administered system of preventative medicine. That is the problem and nothing will save the profession in its present attitude or alleged independence unless it becomes aggressively active and co-operates with these business organizations in the solution that must be formulated. It is imperative that our ideals must be expanded from the individualistic type of human service to a national size. We are bound to be over-ridden unless we do.

Repeatedly have we remarked that such steps must be taken, such attitude assumed and that in place of objection we must assume a leadership and a direction or else be prepared to submit to such new regulations as industry may establish in their pursuit of a plan that will conserve this loss of man power and money in the industrial world. Our relationship to the problem of public health cannot be a passive one.

A true picture of our national health problem may be in part gleaned from the following figures from the office of the surgeon-general. These figures pertain to the drafted men for the army and we quote only those refering to this state:

Ratio of defects per 1,000 men was 467.20.

Ration of defects by disease was: Tuberculosis 22.09, Venereal 44.54, Cardio-vascular 50.30, Developmental 22.52 and Nervous-mental 14.48.

For the first six months of this year the state death rate in heart disease was 145.4

per 100,000 population, or a total of 2,776 cases.

The thoughtful consideration of these figures will demonstrate the need for the most intense concentration of our thought in the effort to seek a solution of our future course. We are submitting them for your deliberate reflection.

ORGANIZATIONAL WORK

Last month we commented editorially upon the work of the Society for the Prevention of Heart Disease. We injected the query as to whether the profession of Michigan was ready to undertake work along the lines indicated. We are now submitting the following communication from President Kay:

"I noted an editorial in the August issue on heart disease. I had been discussing this subject with some of the men and the possibility of the State Society doing some work along this line and was glad to note the editorial.

"We meet once a year for scientific work and the rest of the time pass it to George—in this case pass it to Fred. I mean as a body we do nothing but publish a Journal. I think it would be good for us individually and collectively if we, as a society, did some work as suggested in your editorial. What I have in mind is a heart disease or goitre census. The heart census would be of much more service to the people at the present time.

"We could ask the County Societies to take one meeting, say in the month of October to consider the heart, its infection and diseases and follow it with a questionaire, in which each member would give the number of cases in his clientele, the nature of the lesion, the number of years present, the origin and any other information that would make the returns of value. Why not?

"We do not need a new society for this purpose. The evidence that a society is alive is that it is doing something all the time and if our State Society could give to the country this subject worked out on as large a scale as the state of Michigan, the information would be of value in bringing to the notice of the people the necessity for measures to prevent the loss of time, sickness and death from the all too common diseases of the heart."

We of course agree with Dr. Kay in every detail. The question arises—who will undertake this work. The Journal, of course is eager to co-operate and the State Secretary will be glad to render every possible assistance. May we not have a discussion of this subject so that by the aid of the expressed opinions this work may be undertaken? Are you ready to "snap into it?"

HYSTERIA IN PUBLIC HEALTH LEGISLATION

We have taken the liberty to copy a portion of an editorial appearing in the August issue of the Illinois Medical Journal:

We are satisfied that the Sheppard-Towner Maternity Bill can be defeated in the Committee providing sufficient opposition is developed to overcome the propaganda of the long haired men, short haired women and the individuals in this country who are believers of the soviet form of government, the foundation schools of philanthropy, sociology and psychology whose proteges and graduates await translation into secretaries, assistant secretaries, social surveyors, sob-statisticians, psychologists, professional philanthopists with the uplift urge.

It is time for the people of this country to wake up and to arrest the hysteria in public health legislation which began with Compulsory Health Insurance of Germany, which was brought here by a Russian who never practiced medicine so far as can be learned, which movement was propagandized by the American Association for Labor Legislation and its affiliated organizations whose interlocking directorates are linked with the Rand School in New York and which was developed and exploited under such names as Health Centres, Community Centres, Maternity Centres, Medical Practice (re-registration) Acts, National Socialization of Medicine (public welfare department), etc. One can not get figs from thistles, neither can we expect constructive legislation to proceed from such a source.

FEE SCHEDULES

From time to time there has been discussion and comment in daily papers regarding fees charged by the profession for professional services. Just recently the authorities of John Hopkins Hospital came out with a statement that was given to the press setting forth what they considered to be proper fees for the services rendered by the staff of that institution. Insurance companies, corporations and civic authorities seek to dictate what they shall pay for services rendered to their wards, employees

or industrial risks. The subject is one that is of vital concern to the profession.

At the Bay City meeting, the House of Delegates directed that the President appoint a committee that will give this subject full consideration and to report its findings and recommendations at the next annual meeting. President Kay has appointed the following committee:

Chairman, George McKean, M. D., Detroit. Members, Doctors Peter Stewart, Royal Oak; J. D. Bruce, Saginaw; W. T. Dodge, Big Rapids; J. B. Jackson, Kalamazoo; F. B. Walker, Detroit; J. G. Manwaring, Flint; F. C. Warnshuis, Grand Rapids; H. N. Torey, Detroit.

We shall await with considerable interest the findings and recommendations of this committee. We sincerely hope that a clear pronouncement will be formulated and a definite policy outlined so that we may individually and collectively refute the criticisms and dictations of those who now seek to appraise professional services.

ACUTE POLIOMYELITIS IN DETROIT

During the month of July, 21 cases of this disease were reported in Detroit and six more were added to this number by August 15. While the situation was not deemed serious, the Detroit Department of Health thought it advisable to call the attention of the Detroit Medical Profession to this matter and to suggest certain points as to prevention and care of the patients in connection therewith.

The Department of Health made the following recommendations:

1. Isolate the patients under the care of a competent caretaker or nurse or remove to a hospital.
2. Isolate all cases of fever that can not be reasonably explained as due to some other ailment during the coming four weeks.
3. Collect properly all discharges from the nose and throat on cloths which should be boiled or burned. Disinfect all discharges from the bowels. Take proper care of the caretaker's hands with soap and hot water.
4. Isolate the patient for a period of at least three weeks from the date of onset and for one week after the fever has subsided.
5. Exclude flies and household pets from the room occupied by the patient during period of isolation.
6. Report the case promptly to the department.
7. The Department has in its employ an expert diagnostician who will be glad to confer with the attending physician when assistance is desired.

THE PREVENTION AND TREATMENT OF ENDEMIC GOITER

Marine and Kimball made a study somewhat recently of the pupils in the 5, 6, 7, 8 grades of the Cleveland Public Schools. They concluded that goiter may be prevented simply and cheaply in normal individuals merely by the feeding of two grams of sodium iodide daily for a period of two weeks, twice yearly. Of the 2,190 pupils taking this dose, only five developed an enlargement of the thyroid. Of the 2,305 pupils not taking this salt, 495 showed an enlargement of the gland. 1,183 pupils who showed a thyroid enlargement at the first examination, were treated with the drug and 773 of these presented a decreased enlargement at the second examination. 1,048 pupils with thyroid enlargement at the first examination were not treated and 145 of these were found to have a decrease in size of the gland at the second examination.

Marine and Kimball state that in the practical application of this treatment one must keep in mind the three periods when simple thyroid enlargements most commonly occur; fetal life, puberty, and pregnancy and that prevention of goiter in mother and fetus is as simple as for adolescence.

Editorial Comments

For a long time the discussion continued as to who owned the perscription that was written by the doctor—the druggist or the patient. Recently there has been considerable discussion as to who owns the X-ray plate or film that is made by the radiologist. The Radiological Society of North America has expressed its opinion in the following resolution: "That it is the sense and judgment of this society that all roentgenograms, plates, tracings or other record of examination are hereby declared to be the exclusive property of the radiologist who made them. The radiologist is hereby declared to be a consultant in all cases where he is called upon to examine patients. The radiologist shall not make known to patients, their relatives, friends or guardians, any of his findings or conclusions, nor shall he deliver to them any of the plates, negatives, films or prints unless expressly requested to do so by the physician who referred the patient for examination. It shall be unethical to advertise by circularizing in medical or lay press with price list or fees, descriptions or illustrations of office apparatus or facilities, or to advertise by displaying signs stating the medical specialty; or in public press, telephone directories which are published for general use."

That, in condensed form, is the expression of the

above mentioned national organization and to all of which a hearty amen can be said. All too frequently do we have a patient coming in carrying his own plates or films taken by a radiologist and given to the patient. Anybody, (we admit there are exceptions,) can go into a doctor's office equipped with an X-ray and have an examination made and secure the plates for simply paying the fee. An attorney can send a client to a radiologist and secure a plate to demonstrate to the jury. Therefore we hope that all radiologists or doctors who have X-ray outfits will positively decline to make exposures and examinations unless the case is one that is referred by a physician or surgeon. Much more might be said in regard to this practice, however, we reserve further comments for future discussion.

Some time ago a certain member let out the "holler" that we were posing as an all-wise director of medical affairs and that by these comments we were seeking to dictate the activities of individuals and of the entire profession. Evidently we must have touched upon a tender spot. The purpose sought by these comments is to acquaint the members with expressions that reach us through numerous avenues and which reflect individual as well as public opinion. This in order that we may know how others view us and if the criticism is just to then correct our errors, or, if approval is expressed to continue along the lines that are being pursued. These opinions are by no means personal ones—if they were we would be more explicit in some of these comments for there are times when it is difficult to restrain personal sentiments. It must be remembered that an editor represents constituents and does not inject personal inclinations in a publication, especially one that is the official organ of a society. We are seeking only to state how others view us so that we may be governed accordingly. Personally we have an extreme objection to everything that bears a taint of "kaiserism" or "bossism." We hope to remain free from all aspirations along that line. Nevertheless we enjoy these criticisms because it affords an opportunity to announce a policy. May we have more of them because in the end the critic will learn that things are not always as he sees them from his point of view.

WHEREAS, a careful consideration of Compulsory Health Insurance as developed in the old world, particularly in Germany and Great Britain has shown no advantages either to workers or physician over the methods which it supplanted, and,

WHEREAS, The most careful study of the subject brings out the fact of the almost complete identity of the old cheap fraternity insurance and contract practice, which has proven so vicious in practice, both to doctor and patient plus the burdens of increased taxation due to necessarily cumbersome details of its administration, and,

WHEREAS, the proponents of this proposed legislation have neither proven its needs among the people it professes to serve nor a demand from such people for such disposition of their medical ills, and,

WHEREAS, we believe that such legislation, destroying as it does individuality and initiative in our profession, ultimately would develop the very antithesis of the ideals we have been striving for,

BE IT RESOLVED, that the Saginaw County Medical Society unqualifiedly oppose as vicious and un-American the proposed legislation that comes to us under the title of "An Act to Provide Compulsory Health Insurance for the State of Michigan" and pledge ourselves to assist in every legitimate way the forces in our profession who stand for those ideals in medicine for which succeeding generations of doctors have fought.

A. E. Leitch, Secretary.

Of course, we may be a little more prejudiced than the average individual but even then we contend that we are all to forgetful of principles. A few years ago we were most vituperative in our denouncing Germans and all that had a taint of Germany. Since the armistice we note that the sentiments then expressed have waned to almost nothing. In fact we are falling back into the old habit track and are commencing to quote: "When I was in Germany, Prof. Hoch, etc. etc.," and I dare say some have again removed from storage their certificates of post-graduate work in Germany and hung them up on their walls. And now here comes along an Ohio firm which advertises in the Journal of the A. M. A., "Daily shipments of surgical instruments and supplies from Germany." That is flaunting the red flag too strongly, and we cannot help but rise up and holler. We plead that we remain true to all that we declared a few years go, and firmly continue to boycott all that smells of Germany for a few more years, at least—anyhow until some peace terms have been agreed upon. Do not fall for this propaganda so readily.

The bursting into print in local papers to report some wonderful operation, diagnostic ability or exceptional skill by individual doctors has long since been tabooed. No reputable man would permit such a thing to occur and when such an article does occasionally appear it bears every ear mark that the interview eminates from the doctor. There is being manifested a growing tendency on the part of hospitals to indulge in and to permit publicity of this type. The press reports from time to time some wonderful operation, some exceptional case, some startling discovery that has occurred at this or that hospital. Of course the names of the doctors concerned are carefully omitted and the report indicates that the result or the miracle was achieved by members of the faculty or staff. It is the same cheap form of advertising under a new disguise. We suggest that steps be taken by hospital staffs to discontinue this form of bidding for cases.

Claim adjusters for corporations and insurance companies are employing the method of holding up payment of bills for medical services. They frequently delay payment for four or five months after a statement has been rendered. In doing so they are using your money without paying interest. There is no excuse for such practice. Our suggestion is that when you render a bill and if payment is not forthcoming within thirty days that you write a letter to the president of the company that employed the person whom you attended and put it up to him as to whether he approves such methods. As a rule the claim adjuster will receive rather curt instructions to promptly voucher your bill. Of course if you are willing to let the company use your money and you do not want prompt payment for your services, why let them continue to impose upon you without voicing objection.

Much has been written and said regarding diphtheria and the use of antitoxin. We are informed

that our state has an unusually high death rate from this disease. We know that antitoxin is a sure and effective curative agent, provided it is administered early and in sufficient dosage. The trouble seems to be that many of us do not know the proper dosage of antitoxin and believe that one dose of five or ten thousand units is sufficient. What is needed is greater care in administration of antitoxin. It is not to be given by the dose, but rather to therapeutical effect. Ten thousand units as an initial dose and repeated in six or twelve hours without waiting for laboratory confirmation of the smear will do much to reduce the mortallity rate. And if necessary, keep on giving the antitoxin until results are obtained.

We are frequently in receipt of communications from members asking us to refer to our organization's attorneys legal problems and civil actions. Again we are requested to instruct our attorneys to commence action against certain illegal practitioners. We are unable to comply with these requests because the firm of attorneys that is retained by the society is employed solely for the defense of our members in legal matters pertaining to mal-practice suits. They are retained only for that type of legal work. Consequently we cannot comply with the requests that reach us for services in other legal matters. We are making this announcement for the benefit of all our members.

For several months we have been seeking to arouse more than passing interest in the Journal. We have sought to make each member feel that this is his publication and that he is an associate editor. Further, that it is a medium wherein he may voice his opinions and sentiments. The result has not been very encouraging. This past month, however, we have received two communications that indicate that the effort has born some fruit. Possibly in due time more evidence will be in appearance. So again we reiterate that the Journal is your forum and welcomes your communications—utilize it as such.

Again new advertising copy appears in our advertising pages. We call this to our readers attention to once more impress them with the fact that it is only by means of the revenue derived from advertising contracts that the publication of the Journal is possible. To secure and hold these advertisers it is necessary that they realize upon their advertisements. They will not and cannot unless our members subscribe their patronage. Please recognize this fact and deal whenever possible with these advertisers.

There is a marked distinction between practicing a specialty or some branch of medicine and scientific practice. In the former the dollar is the object of greatest concern. In the latter a careful examination is made, all the symptoms are considered and the treatment is directed along the lines of curative results. Of course we all must make a living and lay up a reserve fund but let us not stoop to trafficing and getting all the traffic will yield with little or no consideration of the end result.

We have noticed that at almost stated intervals the publications of other state societies find it necessary to exhort and plead with their readers to patronize their advertisers. The same argument is also made of the need of maintaining interest in their county societies. The question naturally arises—why does the profession continually need a prod to maintain activity in their own organization that is concerned solely and entirely with the doctor's personal interest? Will not some one rise up and venture an explanation?

Relief in part is fairly certain in the matter of federal and income taxation. We regret that our national organization has not been able to appear before congress and secure the removal of the war tax on X-ray plates and films and some of the other necessary equipment for our offices and hospitals. It is also about time that a concerted effort be directed to secure the amendment of the Harrison act and the reduction of that license fee.

County Society News

HILLSDALE COUNTY

The Hillsdale County Medical Society met at the Country club, Hillsdale, Tuesday, July 26, for the regular quarterly meeting, called to order by President Bell. Dr. Sawyer introduced the speaker of the day, Dr. Hugh Cabot of the U. of M.

Dr. Cabot gave a most interesting and illuminating address on "Tuberculosis of the Kidney." Some of the more important points were: The comparative frequency of this lesion though often overlooked; disease may be present for years with few or no symptoms aside from a little pus in the urine; practically all cases are unilateral in the early stages, hence its frequent curability.

Dr. Cabot condemned the indiscriminate use of the cystoscope, as a serious operation liable in many cases to spread the disease and do harm.

He contended that a single cystoscopy should usually be all that is needed in a given case and that after the presence of tuberculosis has been demonstrated. This can be done by the use of the high power centrifuge and microscope after the pus, casto and other debris have been removed by the ordinary centrifuge. After this has been done, the cystoscope comes in use to determine the seat and extent of the disease.

Presence of disease in a kidney usually shown by the ureter on that side and if found, should be let alone at the cystoscopy and attention given to determining the cerupitency of the other kidney. Nephrictomy may be followed by miliary tuberculosis even in promising cases. Tuberculous disease of the bladder of renal origin, usually curable if the offending kidney can be removed.

Dr. Cabot's address was followed with the closest attention and at its close many questions were asked by Doctors Sawyer, Green, Frankhouser, Miller and others and answered by Dr. Cabot. Owing to the lateness of the hour, Dr. Frankhouser's paper, "The Passing of the Family Physician," was postponed until the October meeting.

After adjournment the members present enjoyed an excellent luncheon at the Country club and departed feeling that it had been an afternoon well spent. D. W. Fenton, Secretary.

GENESEE COUNTY

The Board of Managers of Hurley Hospital, Flint, have recently decided to create a hospital staff system, in order to have the hospital conform to the minimum standard set by the American College of Surgeons for Class A hospitals. The medical board appointed have been working on rules and regulations for hospital procedure and have perfected a record system. At a meeting of

the Genesee County Medical Society held on Aug. 9, the proposed plans were presented to the profession for their criticism and approval. The staff will meet once a month when a summary of the previous months' work will be presented and interesting cases discussed. No member of the staff is to practice the "division of fees" in any manner. Standard methods for the routine work of the hospital have been formulated, and diet lists prepared. It is believed that a high standard of professional work will be maintained at the hospital, and that the members of the staff will co-operate in a happy manner.

W. H. Marshall, Secretary.

NEWAYGO COUNTY

The Newaygo County Medical Society was right royally entertained at the Cottage Hotel at Diamond Lake, July 14. Dr. and Mrs. P. T. Waters of White Cloud, being the host and hostess.

After the regular business meeting, the president introduced Dr. Wm. Northrup of Grand Rapids, who gave a very definite and instructive talk on Focal Infections. Discussions by Doctors Geerling, Branch and Long.

Dr. J. W. Righterink also spoke on Focal Infections, of the teeth in particular, dwelling on the value of very thorough examination before extraction.

After tendering our guests a vote of thanks, the Society was invited by Dr. and Mrs. Waters to join them in a fish and chicken dinner and received no regrets or refusals.

W. H. Barnum, Secretary.

Deaths

Doctor Marshall L. Cushman, aged 38, of Lansing, Mich., died at the Millet Sanitarium, East Bridgewater, Mass., on July 14, following several months illness from tuberculosis.

Dr. Cushman graduated from the University of Michigan, in 1906 and studied in Berlin and Vienna for one year. He then became instructor in the Department of Oto-laryngology, University of Michigan, later practicing in Lansing, limiting himself to ear, nose and throat surgery. During the World war he served as Captain of a Medical corps in France. He was a Fellow of the American College of Surgery and Michigan State Medical Society and American Medical Association.

Doctor George F. Clark was born in 1868 and died suddenly in Saginaw, Aug. 16. He graduated from the Homeopathic Department of the University of Michigan in 1893. He was Health Officer of Saginaw at the time of his death. He is survived by his widow who is a daughter of the late Ex-Congressman Frank W. Wheeler.

State News Notes

COLLECTIONS

Physicians Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

Dr. and Mrs. H. W. Yates and family of Detroit spent their summer at Cherry Beach.

Dr. and Mrs. J. I. Murray and daughttr of Detroit spent the month of August at the Elgin House, Muskoka Lakes, Ontario.

Dr. and Mrs. George C. Caron and daughter of Detroit spent their summer vacation at Burt Lake.

Dr. G. C. Penberthy of Detroit was married to Miss Elizabeth Wardner of Boston, July 16.

Dr. and Mrs. E. W. Haass of Detroit sailed July 16 for a two months stay in Europe.

Dr. R. W. Gillman of Detroit spent the last two weeks of July at Siasconst, Mass.

Dr. G. B. Lowrie of Detroit spent the last two weeks in July in the Georgian Bay region.

Dr. and Mrs. Thomas Brennan of Detroit announced the birth of a daughter, Patricia, July 8.

The family of Dr. S. E. Sanderson of Detroit spent the summer at Les Cheneaux.

Dr. A. C. Drouillard was recently re-elected a member of the Wyandotte School Board.

Dr. and Mrs. Albert H. Krohn of Detroit spent their summer at Ottawa Beach.

A son was born to Dr. and Mrs. Fred Buesser of Detroit the first part of June.

Dr. F. C. Kidner of Detroit spent part of August at Lake Placid.

A son, (George Kanter) was born July 25, to Dr. and Mrs. George J. Reberdy of Detroit.

Dr. C. B. Lundy was elected the latter part of July, Vice President of the Detroit Amateur Athletic Association.

The Ladies Auxiliary of the Michigan Branch of the Ancient Order of Hibernians. elected Dr. W. B. Harm of Detroit, Medical Examiner, July 26.

Dr. Charles G. Jennings left Detroit July 18, for an extensive canoe trip in Northern Canadian streams.

Doctors W. C. Lawrence, E. G. Martin and A. B. Wickham were recently elected resident members of the Detroit Athletic club.

Dr. and Mrs. C. G. Burgess of Detroit spent their summer vacation on a motor trip through New York state and New England.

Dr. Frank J. MacDonnell of Detroit spent his vacation traveling through the east, stopping at Halifax, Boston, New York and Atlantic City.

Dr. and Mrs. George H. Palmerlee returned to Detroit the middle of July from a month's motor trip through New England, New York and Pennsylvania.

Dr. I. L. Polozker of Detroit was appointed July 23, by Gov. Groesbeck, a member of the In-

stitutional Commission of the new Department of Public Welfare.

Dr. and Mrs. George H. Voelkner of Detroit lived aboard their yacht, Arbutus, the most of the summer.

Dr. V. L. Tupper of Bay City was elected somewhat recently Chief of the Staff of Mercy Hospital of that city.

Dr. Walter L. Finton of Jackson, has been appointed Chief Surgeon of the Consumers Power Company.

According to Dr. G. T. Palmer of the Detroit Department of Health, Detroit had the highest birth rate of any city in this country for the first six months of 1921.

Dr. P. O. Wagener, who practiced medicine in Harbor Beach, Mich., for 40 years, died July 30. Mrs. Wagener offers the practice, books, instruments and drugs for sale.

Dr. and Mrs. E. G. Martin and family of Detroit spent the month of August on the shores of Lake Michigan, north of the Little Traverse Bay region.

Doctors G. H. McMahon, G. J. Reberdy and Irving Condit left Detroit the middle of August for a 10-day fishing trip in the Georgian Bay region.

Dr. Walter P. Manton of Detroit was elected vice president of the American Gynecological Society at its annual meeting held in Swampscott, Mass., July 2-4.

Dr. George M. Waldeck of Detroit has removed his offices to 1001-1007 David Whitney building. His practice is limited to diseases of the eye, ear, nose and throat.

Dr. W. R. Ballard and Dr. William Kerr, both of Bay City, left the middle of July for a three to four weeks' camping trip to the Muskoka Lakes.

Dr. and Mrs. David Stuart Wilson of Detroit took a motor trip in July through the Adirondacks and the White Mountains. They returned by the way of New York city and the Catskill mountains.

Dr. John E. Weeks of New York city, presented the University of Michigan with $10,000 in June. The income from this is to be used for a research scholarship in ophthalmology, either undergraduate or graduate.

The Ninth Annual Session of the Mississippi Valley Conference on Tuberculosis will be held at Columbus, Ohio, Sept. 12, 13, 14. Dr. E. B. Pierce of Howell is First Vice President and Dr. J. S. Pritchard of Battle Creek is on the Advisory Council.

The following members have been appointed to the Entertainment Committee of the Wayne County Medical Society for 1921-1922 by the President, Dr. James E. Davis—Drs. H. W. Yates, Chairman; C. D. Brooks, H. W. Peirce, E. W. Caster, Ray Conner, F. L. Honhart and B. H. Larsson.

Dr. J. F. McGlaughlin of Wyandotte was eleced President and Dr. W. B. Harm of Detroit was elected Medical Examiner of the Michigan Branch of the Ancient Order of Hibernians at their annual meeting, held in Detroit, July 26.

Dr. Frank L. Newman left Detroit July 14. He first visited Mr. Percy Dwight in the Berkshires and the first of August he joined Mr. J. B. Ford in his camp at McGregor Bay. The doctor returned to Detroit Sept. 1.

Married—Dr. Louis W. Toles and Mrs. Maude M. Brown, both of Lansing, July 30. After an extended sojourn in New York and other eastern cities, will be at home Dec. 1 at 530 Capital Ave., South Lansing, Mich.

The President of the Wayne County Medical Society has appointed the following Legislative Committee for 1921-1922—Drs. H. A. Luce, chairman; G. E. Frothingham, D. M. Graham, C. H. Oakman, H. W. Hewitt and Wadsworth Warren.

Birth certificates will be sent to every baby in the city of Detroit, born on or after July 1. They are made out by the Detroit Department of Health and are in the form of an official welcome to Detroit.

Dr. Harold F. Ohrt wishes to announce that he has opened his office suite, 422 McKerchey building, 2631 Woodward Ave., Detroit, Mich. Limiting his practice to the specialty of eye, ear, nose and throat, having obtained his training in New York city, the eye work under Dr. Knapp and the other work from the various hospitals in that city.

Dr. George H. Ramsey of Detroit has been appointed by Dr. R. M. Olin, a deputy in the State Department of Health. He will have charge of the work of treating tubercular patients in state institutions and will superintend the proposed tubercular hospital for prisoners. After leaving the army, Dr. Ramsey has been superintendent of the tubercular pavalion at the Herman Kiefer Hospital, Detroit.

The formal opening of the new Urelogical Unit of Grace Hospital, Detroit, was held July 1. This unit includes a ward of 16 beds, private rooms, a laboratory, and a fully equipped operating suite for diagnosis and surgical treatment of all diseases of the male and female genite-urinary tract. The service is under the direction of Dr. H. W. Plaggemever, Chief of the Department of Urology of Grace Hospital.

The Officers of the Medical Staff of tht Children's Free Hospital, Detroit, for 1921 are, Chairman, Dr. F. C. Kidner; Vice-Chairman, Dr. B. R. Hoobler, and Secretary, Dr. H. L. Begle. The Director of the Medical Department is Dr. B. R. Hoobler, of the Surgical Department, Dr. G. C. Penberthy; of the Department of Orthopedic Surgery, Dr. F. C. Kidner; of the Department of Ophthalmology, Dr. H. L. Begle; of the Department of Otology, Dr. J. S. Wendell; of the Department of Laryngology, Dr. H. L. Simpson; of

the Department of Neurology, Dr. H. A. Reye, and of the Laboratory Department, Dr. E. R. Witwer.

Dr. George K. Pratt, for a number of years nerve specialist in Flint, has left for Boston to assume the duties of medical director of the Massachusetts Mental Hygiene Society. His work will be largely organization and executive, and devoted chiefly to furthering public knowledge of nervous and mental disorders and in establishing psychopathic clinics throughout the state.

Dr. Pratt came to Flint six years ago as an assistant physician to Oak Grove hospital, under Dr. C. B. Burr. In July, 1917, he received a commission in the department of nervous and mental diseases of the army medical corps and experienced two years of service both in home camps and in France. Following his discharge he returned to Oak Grove and remained with that institution until its close in May, 1920. Since then he has devoted his time to private neuropsychiatric practice in Flint, aiding considerably in the work of the city health department.

The new post is especially desirable, carrying as it does, associations with some of the country's leading alienists, and Dr. Pratt expects to maintain close liaison with the National Committee for Mental Hygiene in New York.

Dr. and Mrs. Emil Amberg of Detroit spent their summer vacation at Lake Placid.

Dr. H. M. Rich of Detroit spent two weeks in August on the Muskoka Lakes.

Dr. and Mrs. S. H. Knight of Detroit motored through the New England States in August.

A daughter of Dr. and Mrs. F. N. Blanchard of Detroit died during the early part of August.

Dr. and Mrs. Arthur D. Holmes and family left Detroit the middle of August for Bretton Woods, N. H., where they spent several weeks.

Dr. and Mrs. R. M. McKean of Detroit announced the birth of a daughter, Ellen Jane, August 5.

The Advisory Council of Health held their summer meeting at Houghton August 16, 17 and 18. Doctors Kiefer, Gowdy, Slemons and Turner, Judge Carr and Commissioner Olin attended this meeting.

Dr. and Mrs. Guy L. Connor were the guests of Dr. and Mrs. Guy L. Kiefer at their summer cottage, Mackinaw Point, the first half of August.

Lieut. A. R. MacMillan, son of Dr. and Mrs. J. A. MacMillan of Detroit, was married Aug. 29, to Miss Margaret McGregor of Detroit.

Dr. H. N. Torrey of Detroit left the last of August for a hunting trip in Alaska.

Among the charter members of the Beach Grove Country Club, Walkerville, Ontario, are the following Detroit physicians: Doctors W. D. Barrett, W. R. Clinton, J. J. Corbett, E. S. Crump, E. J. Durocher, J. E. Elliott, Frank MacKenzie, Angus McLean, T. F. Mullen, H. H. Sanderson and W. A. Spitzley. Dr. H. H. Sanderson is one of the directors of this club.

A hundred bed addition to the Herman Kiefer Hospital, Detroit, will be started this fall. In the present buildings, 340 beds are devoted to contagious diseases, 205 to tuberculosis, and 60 to maternity cases.

Dr. and Mrs. Joseph Rottenberg of Detroit announced the birth of a daughter, Kalmayne, Aug. 2.

Plans for the organization of a school for public health in Harvard University with the aid of an initial gift of $1,785,000 by the Rockefeller Foundation, were announced Aug. 21, by the University and the Foundation. The new school will provide opportunities for research, will unify existing courses and will offer new or extended teaching facilities in public health administration, vital statistics, immunity, bacteriology, medical zoology, physiological hygiene and communicable diseases. The cost of maintenance and development of the school will be met from endowment funds in part set aside by the University and in part contributed by the Foundation. The arrangement also provides for further gifts if the school seems to demand it, to any amount which shall not exceed $500,000.

Dr. and Mrs. L. F. C. Wendt of Detroit spent two weeks in August at Harbor Springs.

Peking Union Medical College, erected by the China Medical Board of the Rockefeller Foundation, was opened Sept. 5, 1921. The following Americans were present; Mr. John D. Rockefeller, Dr. George E. Vincent and Dr. William H. Welch.

The Southwest and Missouri Valley Medical Association will hold a joint meeting Oct. 25-28, in Mansas City, Mo.

On Aug. 17, the Board of Trustees of the University of Pennsylvania granted Gen. Leonard Wood leave of absence from scholastic duties until Sept. 1. This action was taken at the request of Secretary of War Weeks, to release the General from his promise to become Provost of the University of Pennsylvania so that he might take charge of the government's affairs in the Philippines.

Dr. Charles E. Humiston, president of the Illinois State Medical Society, appeared July 18 before the Committee on Interstate and Foreign Commerce at Washington, D. C., and gave voice to strong objections to the Sheppard-Towner Maternity bill.

The Illinois State Medical Society at its last annual meeting passed resolutions condemning the Sheppard-Towner Maternity Bill as a paternalistic and pernicious form of attempted medical legislation.

The American Public Health Association announces four phases of its semi-centennial celebrations to be held in New York city, Nov. 8-18, 1921:

(a) The Scientific Sessions will be held Nov. 14-18. There will be programs of the following sections: Laboratory, Vital Statistics, Public Health Administration, Sanitary Engineering, Industrial Hygiene, Food and Drugs. There will also

be special programs on Child Hygiene and Health Education and Publicity.

(b) Health Institute, Nov. 8-12. During the week preceding the convention proper there will be organized demonstrations of the various types of public health activity in New York and environs: Health Department bureaus, laboratories, health centers, clinics, hospitals, etc.

The purpose will be to show health functions in actual operation, especially those which may be duplicated in other cities. In one sense the Health Institute may be considered as a school of instruction in practical health administration.

(c) Dr. Stephen Smith, the founder and first president of the Association, who is now in his 99th year, will be the guest of honor at a banquet to celebrate his approaching centennial and the semi-centennial of the association.

(d) A Historical Jubilee Volume, "Fifty Years of Public Health," will be published about Oct. 1. There will be articles by seventeen authors, relating to the accomplishments and present status of each of the important branches of pulic health. While concentrating upon the pulic health of the last 50 years, the book will describe the earlier beginnings of public health in an introductory way, and may, therefore, be considered a general history of public health from the earliest days to the present.

Detailed announcements, programs, and information concerning special railroad rates will appear in the American Journal of Public Health and the News Letter of the Association from time to time or may be had upon addressing the Association at 370 Seventh Avenue, New York City.

Book Reviews

THE ASSESSMENT OF PHYSICAL FITNESS: By Correlation of Vital Capacity and Certain Measurements of the Body. By Georges Dreyer, C. B. E., M. A., M. D., Fellow of Lincoln College, Professor of Pathology in the University of Oxford. In collaboration with George Fulford Hanson. With a foreword by Charles H. Mayo, M. D., Rochester, Minn. Cloth, pp. 128, with XXIV Tables. Price $3.50 net. New York, Paul B. Hoeber.

This is a book that should command the attention of all physicians who are interested in industrial medicine, actuaries of insurance companies, Public Health nurses and settlement workers, for the reason that unlike most books on the same lines, the author contends that the occupation of the individual plays a large part in his physical dimensions.

In the past, insurance companies have had hard-and-fast rules as to what the physical dimensions should be to make the applicant acceptable irrespective of his occupation, and the same remark applies to all those investigators of physical fitness who have followed the matter with more or less interest. Dr. Dreyer divides all workers into three classes and shows the differences in the physical measurements between Class A and Class B—men who have undergone prolonged physical training, or have an occupation which leads to muscular development, and men of the professional and business classes. Class C contains those who lead an extremely sedentary life, which it can readily be understood makes for a greater degree of under-development than would obtain among those of Class A or B. Hence the new note in a book on physical fitness and one that is inclusive of matters which have been overlooked by other authors, and on account of their neglect have given a one-sided account of the matter.

To quote Dr. Mayo who wrote the Foreword: "The importance of the physical fitness of man has been only partially appreciated in the estimate of prognosis by physicians in the examination of the sick and in the measurement of the lung capacity by examiners for insurance companies. Dr. Georges Dreyer has shown that the estimation of vital capacity is more than a mere test, that it indicates the tendency to health and resistance to disease, and that in a prognosis of life's duration it parallels very closely the results of a general examination."

That the theories advanced by Dr. Dreyer are sane cannot fail to be apparent at once to the physician who reads this book, and no doubt will not be long in attracting the attention of the actuaries of our various insurance companies. What with the Public Health Service and settlement workers already following the precepts laid down in this book and the strides made in industrial medicine in apportioning physical fitness on scientific lines, it will behoove all insurance companies to take into consideration, not lightly but with seriousness, the moment of a thorough understanding of the variations in physical measurements as these obtain normally in the man who does hard physical work, the man who does light physical work, and the man who leads a sedentary existence Only in this way will insurance companies meet the problem in a just manner as to who should be accepted and who should be refused.

GENERAL PATHOLOGY: An introduction to the study of medicine. Being a discussion of the development and nature of processes of disease. By Horst Oertel, Strathcona Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and of the Royal Victoria Hospital, Montreal, Canada. Cloth, pp. 357, with illustrations. Price $5.00 net. New York, Paul B. Hoeber.

It is not overpraise to state that this work of Oertel's is one of the outstanding books of the day. Written in a style that is commendable and in the scientific spirit without which every book on the subject of pathology falls short of being in the first rank, it gives the reader a thorough interpretation of all the problems in pathology, some of which no doubt have perplexed him, on account of his limited knowledge, due to the fact that he has never been fortunate enough to acquire an illuminating book on the subject.

The subject of general pathology has too long been the bete noire among physicians in general, even among those who lay claim to being well versed in all subjects of Medicine. The reason for this is that most physicians—the majority—have for some unexplainable reason regarded the study of general pathology as too abstruse and too wearisome a subject to cope with, and have relegated, on account of this attitude, its interpretation to those men in the medical profession who are specialists in pathology.

While there are good reasons for this attitude, as regards a large number of books on general pathology, in the case of Oertel's work a front of this nature would be a detriment to the busy practitioner, for reasons which are too obvious to

state here in their entirety. But there are three reasons which should be mentioned here, why Oertel's work commends itself to the thousands of physicians throughout the country, and they are as follows: Pathological processes are regarded as expressions of physico-chemical laws; the great educational value which accrues from a study of the historic development of ideas and hence an understanding of current ideas; the visualization of possible pathological occurrences based on the anatomical conceptions of the subject.

Any book on general pathology that has reasons such as the three mentioned above, has an asset which should bespeak a wide circle of readers; and when added to these are a simplicity of presentation and clarity of thought that are evidenced on every page, it cannot be gainsaid, in all fairness to the author, that medical profession has a book at hand that must be considered.

DISEASES OF CHILDREN: Designed for the use of students and practitioners of medicine by Herman B. Sheffield, M. D., formerly instructor in diseases of children, New York Post-Graduate Medical School. 798 pages, 238 illustrations. Cloth, price $9.00. C. V. Mosby Co., St. Louis.

This new volume on diseases of children is compiled from the author's experience of nearly thirty years in the field of Pediatrics. It incorporates the latest methods in the theory and practice of the diseases of infancy and childhood and thus especially meets the needs of the general practitioner as well as the medical student. The book is divided into fourteen sections with classification differing somewhat from that of old text books, but made to conform to the modern conception of the causes of disease. For example, infant feeding is based upon the most recent studies of the digestibility of proteins, fats and carbohydrates.

An especially valuable chapter is that upon the examination of the patient. It will be of especial assistance in surmounting the difficulty of diagnosis in infants and older children. So, too, is the article on the large abdomen. A careful survey is presented of the most modern methods of laboratory diagnosis in order that the physician may be able to properly determine the condition of the patient whom he examines. The use of serums and vaccines is fully discussed and dwelt upon at length.

Under the chapter devoted to Materia Medica it is revealed that the author is a firm believer in certain drugs and discusses efficacious medication in a commendable manner. So, too, does he discuss Hydrotherapy, Massage and Organal therapy.

One might thus continue and devote some commendable comments to each section of the book which is covered in a thorough manner indicated in the above paragraphs. It is a text that is bound to be accorded a welcome reception. Further, it is a text that should be in the hands of the progressive physician who is desirous of fully meeting up to the responsibilities that rest upon those who are called to attend the infant or the child whose health has deviated from the normal.

PRACTICAL PSYCHOLOGY AND PSYCHIATRY: C. B. Burr, M. D., Flint, Mich. Fifth edition, revised and enlarged. F. A. Davis Co., Philadelphia.

It is many centuries since Plato (Dialogues) criticized the physicians of that period because they paid too much attention to the body and neglected the soul. The same criticism can be made today, but if every doctor were to read this practical elementary manual of 269 pages and apply its teachings, this stigma would soon be removed. This book is the product of a long and successful experience in the care of the insane. Dr. Burr's dignified, logical and entertaining style is not unknown to the physicians of Michigan. There is an entire absence of that pedantry which bores one on reading many otherwise good books on Psychiatry. The general principles of Psychology are discussed briefly and clearly to enable the reader to grasp the principles of Mental Diseases. A new chapter on "Symbolism in Sanity and in Insanity" is very entertaining and instructive. Definitions are simple and comprehensive. Well chosen case histories illustrate the types of cases most commonly seen. The chapters on nursing and general management of the insane show much thoughtful consideration of the patient's welfare. Drug therapy receives due attention and the extensive clinical experience of the author gives much weight to his therapeutic observations. The chapter on "The Prevention of Insanity" has in it much sound and wholesome philosphy as well as a keen criticism of the foibles of modern society that marks the distinguished ex-president of our State Medical Society as a keen observer of the philosophic and social tendencies of our times. W. H. M.

FOOD PRODUCTS, THEIR SOURCE, CHEMISTRY AND USE. E. H. S. Bailey, P. H. D. Second revised edition. Cloth, 550 pages. Price $2.50. P. Blakiston's Son & Co.

This is a most excellent volume and one that is filled with extremely valuable as well as interesting information and facts regarding the source of food products, their chemistry and their use. Greatly as the physician is concerned with the diet and nourishment of his patient, it seems to us that he will be able to advise far more intelligently if he has this work at his hand and has familiarized himself with its contents. It is a volume that we should like very much to see in the hands of every practitioner.

OPERATIVE SURGERY. J. Shelton Horsley, M. D., F. A. C. S. Cloth, 721 pages. C. V. Mosby Co., St. Louis. Price $10.00.

In this book the reader finds particular stress laid upon the preservation of physiological functions and the interpretation of biologic processes that follow operation. In bringing out this principle the author has been successful in the writing of a text book on operative surgery that incorporates many splendid features and essential details that are frequently overlooked whenever a surgical attack is made. It removes from the operative procedure mechanical details and raises the question as to how the surgeon may extirpate or correct existing pathology and at the same time restore or conserve physiological functions of the tissues and organs. Every surgeon can find much that will be suggestive and practical in his operative work if he but carefully studies the text of this volume.